SPTAC
STRATEGIC PREVENTION
TECHNICAL ASSISTANCE CENTER

LOCATING DATA ON RISK FACTORS FOR OPIOID OVERDOSE

Drug-involved overdose deaths increased from 2019 to 2021, with more than 106,600 overdose deaths reported in the U.S. in 2021. This increase was driven mainly by synthetic opioids other than methadone (i.e., fentanyl).[1] Overdose deaths involving opioids, including prescription opioids, heroin, and synthetic opioids like fentanyl, have increased more than eight times since 1999.[2]

Many factors come into play when looking at a complex issue like opioid overdose. Knowing which factors are associated with opioid overdose in a community can help prevention practitioners identify strategies that address these factors and that are most likely to succeed.

Yet finding information on overdose-related factors can be challenging. While most practitioners can readily access data on opioid overdose overall, finding data on specific risk factors can be difficult for a variety of reasons. These data are collected across multiple sources and are not always clearly defined. Also, many of these factors are not measured directly and require examining proxy measures or alternative data.

HOW TO USE THIS TOOL

Practitioners working to prevent opioid overdose can use this tool to:

- Learn more about behaviors they know, or suspect, are contributing to opioid overdose in their communities in order to better focus their prevention efforts.
- Identify new sources of data to supplement those with which they are already familiar.

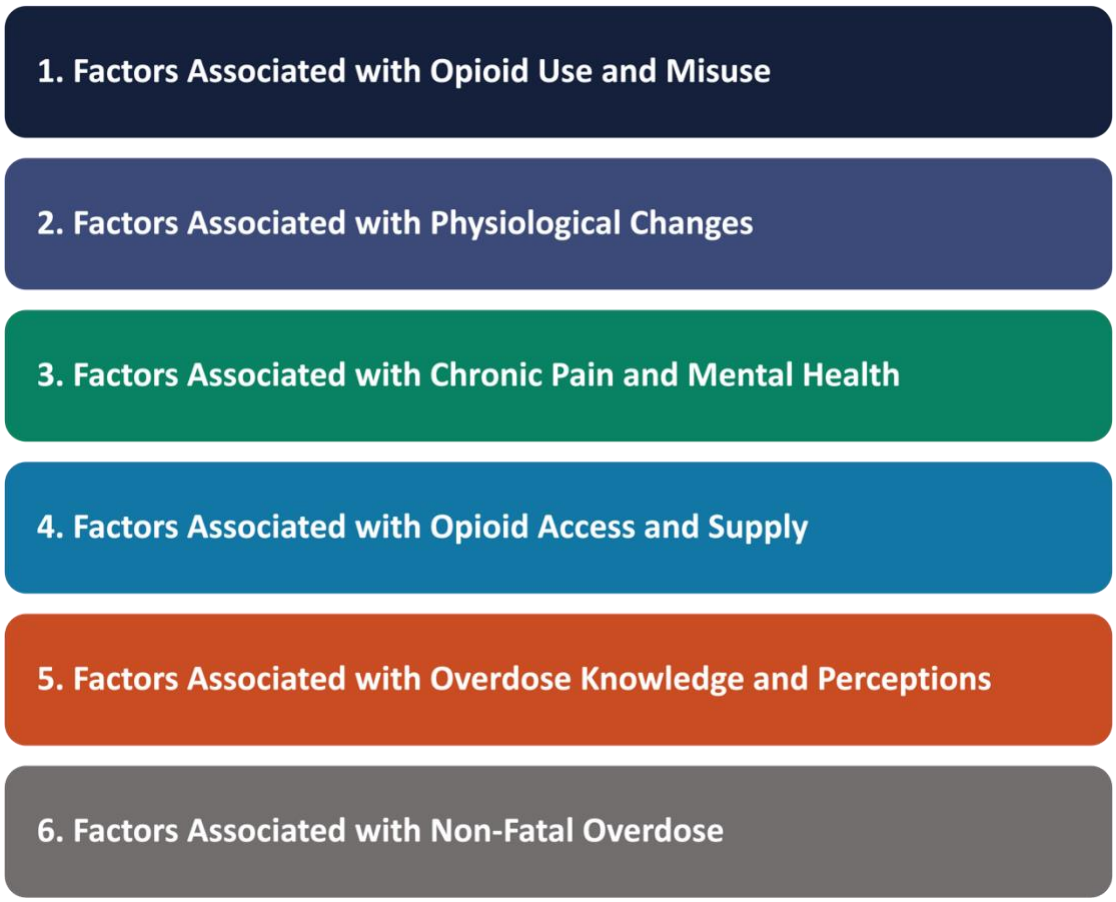
[1] Drug Overdose Death Rates National Institute of Health. Available at https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates

[2] Wide-ranging online data for epidemiologic research (WONDER). Atlanta, GA: CDC, National Center for Health Statistics; 2021. Available at http://wonder.cdc.gov

- Identify proxy measures for factors of interest (if, for example, specific types of data are not available at the local level).
- Identify potential prevention partners (for example, local hospitals, emergency medical services) who regularly collect data on a range of relevant factors.

HOW THIS TOOL IS ORGANIZED

The factors included in this tool are organized according to six color-coded categories:



For each factor, we provide a brief description accompanied by (1) one or more relevant data sources, and (2) one or more indicators[3] that either measure the factor directly or can serve as a proxy measurement for the factor. When available, we included hyperlinks for the data sources, which will take you to websites that will give you more detailed information about the data source and, in some cases, provide online interactive data analysis or allow for direct dataset downloads. A complete list of data sources, including access information (when available), is

[3] An indicator is an observed statistical measurement that can be used to compare data over time.

included in the *Appendix*. These sources include online survey data, interactive databases, downloadable raw data, and different types of state and local data.

1. Factors Associated with Opioid Use and Misuse

Any opioid use–including the medical and nonmedical use of prescription opioids, as well as the use of non-prescription opioids like heroin–increases a person's risk of opioid overdose. Risk factors associated with opioid use, misuse, and overdose include high dosage and potency, poly-substance use, mode of administration, solitary use (no data/proxy indicators available), long-term use, and history of other substance use.

High Dosage and Potency of Opioid	
Data Source	**Indicator**
Medicare/Medicaid billing data	• Multiple prescribers • Multiple pharmacies • Early refills • Pain complaints
Medicare Part D Opioid Prescribing Mapping Tool	• Opioid prescribing rates • Opioid prescriber summary
Prescription drug monitoring programs (PDMPs)	• Type of drug dispensed • Quantity of drug dispensed • Number of days a given quantity is supposed to last • Multiple prescribers • Multiple pharmacies

Poly-Substance Use	
Data Source	**Indicator**
Medicare/Medicaid billing data	• Type of drugs dispensed • Concurrent prescriptions for multiple drugs
PDMPs	• Type of drugs dispensed • Concurrent prescriptions

Poly-Substance Use	
Treatment Episode Data Set (TEDS)	• Primary substance(s) at admission

Mode of Administration	
Data Source	**Indicator**
Monitoring the Future (MTF)	• Lifetime prevalence of heroin use with a needle • Lifetime prevalence of heroin use without a needle
National Survey on Drug Use and Health (NSDUH)	• Method of heroin use (sniffed, smoked, injected, some other way)

Using Alone
There are no data/proxy indicators available at this time.

Long-Term Use[4]	
Data Source	**Indicator**
Hospital discharge databases	• Date of ICD-10 Diagnosis • Date of pain complaints • Multiple visits to the emergency department over a specified time period
Medicare/Medicaid billing data	• Date of pain complaints • Date treated • Date prescribed
PDMPs	• Date dispensed
TEDS	• Multiple admissions to treat substance misuse or dependence over a specified time period

[4] To obtain these measures, additional statistical analyses are required to pair multiple years.

History of Other Substance Use	
Data Source	**Indicator**
MTF	• Tobacco (cigarettes, cigars, regular little cigars or cigarillos, smokeless tobacco, e-vaporizers): Lifetime use, past 30-day use • Inhalants: Lifetime use, last 12-month use, last 30-day use • Alcohol: Ever used, lifetime use, last 12-month use, last 30-day use, how often do you drink to feel drunk in past 12 months, five or more drinks in a row in the past two weeks • Marijuana/Hashish (synthetic marijuana: Lifetime use, last 12-month use, last 30-day use • Amphetamines: Lifetime use, last 12-month use, last 30-day use • "Crack" Cocaine: Lifetime use, last 12-month use, last 30-day use • Cocaine: Lifetime use, last 12-month use, last 30-day use • Tranquilizers: Lifetime use, last 12-month use, last 30-day use • Other Narcotics: Lifetime use, last 12-month use, last 30-day use • Methamphetamines: Lifetime use, last 12-month use, last 30-day use • LSD ("acid"): Lifetime use, last 12-month use, last 30-day use • Hallucinogens other than LSD (MDMA, peyote, "shrooms," PCP): Lifetime use, last 12-month use, last 30-day use • Sedatives/Barbiturates: Lifetime use, last 12-month use, last 30-day use • Steroid Use: Lifetime use, last 12-month use, last 30-day use
NSDUH	• Tobacco: How old were you the last time of cigarette use, year of last cigarette use, month of last cigarette use, how old were you when you last used smokeless tobacco, year of last smokeless tobacco use, month of last smokeless tobacco use, how old were you the last time of cigar use, year of last cigar use, month of last cigar use • Alcohol: How old were you the last time you drank an alcoholic beverage, year of last alcohol use, month of last alcohol use, had any alcoholic beverage in the year before last • Marijuana/Hashish: Ever used year before last, how old were you, year of last use, month of last use • Hallucinogens: How old were you the last time of use, year of last use, month of last use • Cocaine/Crack: How old were you the last time of use, year of last use, month of last use • PCP: How old were you the last time of use, year of last use, month of last use • LSD: How old were you the last time of use, year of last use, month of last use

History of Other Substance Use	
	• MDMA ("Molly," ecstasy): How old were you the last time of use, year of last use, month of last use • Methamphetamines: How old were you the last time of use, year of last use, month of last use • Sedatives: Lifetime use, recent sedative use, ever used sedative not directed by a doctor, last used sedative to get high, last sedative used in the past 12 months, used sedative not directed by doctor past 30 days • Tranquilizers: Lifetime use, misuse frequency past year, misuse frequency past month • Inhalants: How old were you the last time of use, year of last use, month of last use
TEDS	• Treatment for other substance use/misuse • Injection drug use
Youth Risk Behavior Surveillance System (YRBSS)	• Ever drank alcohol • Drank alcohol before the age of 13 years • Ever used marijuana • Tried marijuana before the age of 13 years • Ever used synthetic marijuana • Ever used cocaine • Ever used ecstasy • Ever use methamphetamines • Ever took steroids without a doctor's prescription • Ever used inhalants • Ever injected any illegal drugs • Ever used hallucinogenic drugs

2. Factors Associated with Physiological Changes

A variety of factors related to the physiological changes that a person who uses opioids experiences can affect their overdose risk. These include opioid dependence and addiction, changes in opioid tolerance, and physical health problems.

Opioid Dependence and Addiction	
Data Source	**Indicator**
NSDUH	• Prescription pain reliever dependence • Main drug receiving treatment or counseled for the last time treated • Received treatment for pain relievers • Pain reliever withdrawal symptoms
TEDS	• Primary opiates/synthetics admissions

Changes in Tolerance
There are currently no national data sources that measure changes in opioid tolerance. Proxy measures such as drug use prior to long-term hospitalization or incarceration can be used to estimate the likelihood of a person experiencing a change in tolerance.

Physical Health Problems	
Data Source	**Indicators**
Behavioral Risk Factor Surveillance System (BRFSS)	• Health status
Electronic medical records	• ICD-10 codes for diagnoses of certain conditions (e.g., compromised immune system, pulmonary dysfunction, liver dysfunction)
Hospital discharge databases	• ICD-10 codes for diagnoses of certain conditions (compromised immune system, pulmonary dysfunction, liver dysfunction)
National Health and Nutrition Examination Survey (NHANES)	• General health status

3. Factors Associated with Chronic Pain and Mental Health

In addition to physical conditions that affect physiological changes, other health-related factors associated with overdose include chronic pain, mental health disorders, and adverse life

experiences, such as witnessing a family member overdose, financial struggles, and homelessness.

Chronic Pain	
Data Source	**Indicator**
Medicare/Medicaid billing data	• ICD-10 diagnoses for chronic pain conditions

Mental Health Disorders	
Data Source	**Indicator**
Medicare/Medicaid billing data	• ICD-10 diagnoses for mental health disorders
NHANES	• Feeling down, depressed, or hopeless • Thoughts of being better off dead or hurting yourself
NSDUH	• How often do you feel hopeless • How often do you feel sad or depressed • Suicidal ideation • Suicide attempts
YRBSS	• Feeling sad or hopeless • Suicidal ideation • Planning suicide attempt • Attempted suicide • Did the attempt result in injury, poisoning, or overdose that had to be treated by a doctor
BRFSS	• Days was your mental health not good • Days poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation

Adverse Life Experiences	
Data Source	**Indicator**
BRFSS *Module only available in certain states during certain survey years: Alaska, Arizona, Arkansas, California, Connecticut, Florida, Hawaii, Iowa, Illinois, Kansas, Maine, Michigan, Minnesota, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Wisconsin*	• Depressed, mentally ill, or suicidal • Problem drinker or alcoholic • Illegal street drugs or abused prescription medications • Incarceration • Divorce or separated parents • Physical abuse • Verbal abuse • Inappropriate touching • Forced sexual situations
Law enforcement	• Past incarcerations

4. Factors Associated with Opioid Access and Supply

Increases in the availability of opioids are often associated with higher rates of related opioid overdose deaths. Risk factors related to opioid access and supply include increases in opioid prescribing, increases in the amount of opioids being diverted, and changes in the supply of non-prescription opioids.

Opioid Prescribing Practices	
Data Source	**Indicator**
Medicare Part D Opioid Prescribing Mapping Tool	• Opioid prescribing rates
PDMPs	• Type of drug dispensed • Quantity of drug dispensed • Number of days a given quantity is supposed to last

Opioid Prescribing Practices	
	• Multiple prescribers • Multiple pharmacies

Diversion of Prescription Opioids	
Data Source	**Indicator**
NSDUH	• Source of prescription pain relievers

Changes in the Supply of Non-Prescription Opioids	
Data Source	**Indicator**
Automation of Reports and Consolidated Orders System (ARCOS)	• Retail drug distribution by zip code within state by gram • Retail drug distribution by state within drug code by gram • Quarterly drug distribution by state per 100,000 population by gram • Cumulative distribution by state in grams per 100,000 population • Statistical summary for retail drug purchases by gram • U.S. summary for retail drug purchases by gram
Law enforcement data	• Arrests related to opioids • Bookings • Drug seizures
NSDUH	• Heroin use • Difficulty getting heroin
YRBSS	• Heroin use

5. Factors Associated with Overdose Knowledge and Perceptions

Individuals who don't realize they are at risk of opioid overdose, or don't understand why they may be at risk, could be more likely to experience an overdose. Data on individual overdose knowledge are limited and not currently collected on a national level. Data on perception of harm, however, are collected at the national level.

Perception of Harm	
Data Source	**Indicator**
MTF	• Risk of harm from trying heroin once or twice without using a needle • Disapproval from trying heroin once or twice without using a needle • Risk of harm from taking heroin occasionally without using a needle • Disapproval from taking heroin occasionally without using a needle • Risk of harm from trying OxyContin or Vicodin once or twice • Disapproval from trying OxyContin or Vicodin once or twice • Risk of harm from occasionally taking OxyContin or Vicodin • Disapproval from occasionally taking OxyContin or Vicodin

6. Factors Associated with Non-Fatal Overdose

Experiencing a non-fatal overdose in the past is associated with increased risk of experiencing another one in the future. This increased risk may be due to the factors that *contributed to* the initial overdose. Contributing factors related to non-fatal overdoses include all of the risk factors presented in the sections above. Please see these sections for information on specific factors, data sources, and indicators.

People who experience a non-fatal overdose may also be at increased risk of experiencing another because of health problems or consequences that resulted *from* the initial overdose. These consequences can include extreme stress; damage to the brain, heart, liver, or kidneys; or reduced tolerance. Surviving an opioid overdose can also be associated with one more of the risk factors related to chronic pain and physical health problems, depression or other mental health disorders, access to opioids, and opioid addiction.

Experiencing a Non-Fatal Opioid Overdose	
Data Source	**Indicator**
Hospital discharge databases	• ICD-10 codes for opioid overdose
Insurance Billing Data	• ICD-10 codes for opioid overdose

Experiencing a Non-Fatal Opioid Overdose	
National Poison Data System	• Number of non-fatal opioid overdoses
Overdose Detection Mapping Application Program (ODMAP)	• Location of overdose
National Emergency Medical Services Information System (NEMSIS)	• Rate of non-fatal opioid overdose • Average number of Naloxone administration per overdose patient • Average emergency medical services time to patient • Percent not transported to a medical facility

Consequences of Initial Overdose	
Data Source	**Indicator**
Hospital discharge databases (link)	• ICD-10 codes for opioid-related health problems
Medicare/Medicaid billing data	• ICD-10 codes for opioid-related health problems

REFERENCES

1. Carmona, C. (2016, June 8). What opioid hysteria leaves out: Most overdoses involve a mix of drugs. *The Guardian.* https://www.theguardian.com/us-news/commentisfree/2016/jun/08/opioid-epidemic-drug-mix-overdose-death

2. Centers for Disease Control and Prevention, National Center for Health Statistics. (2017, December). CDC WONDER online database: Multiple causes of death 1999–2020. *Centers for Disease Control and Prevention*. https://wonder.cdc.gov/wonder/help/mcd.html

3. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2011, November). Policy impact: Prescription painkiller overdoses. *Centers for Disease Control and Prevention.* https://www.cdc.gov/drugoverdose/pdf/PolicyImpact-PrescriptionPainkillerOD-a.pdf

4. Daniulaityte, R., Falck, R., & Carlson, R. G. (2012). "I'm not afraid of those ones just 'cause they've been prescribed": perceptions of risk among illicit users of pharmaceutical opioids. *The International journal on drug policy*, *23*(5), 374–384. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3387517/

5. Dasgupta, N., Beletsky, L., & Ciccarone, D. (2018). Opioid Crisis: No Easy Fix to Its Social and Economic Determinants. *American journal of public health*, *108*(2), 182–186. https://doi.org/10.2105/AJPH.2017.304187

6. Doe-Simkins, M. in SAMHSA's Center for the Application of Prevention Technologies. (2018). The role of prevention following a non-fatal overdose [video]. *SAMHSA.* https://www.youtube.com/watch?v=AWeWPWFeN4c&list=PLBXgZMI_zqfSx1TQTzbWjoFqJitZ1CBgK&index=32

7. American Addiction Centers (2023, May 02). Nine memorable quotes from former addicts. *DrugAbuse.* https://drugabuse.com/9-memorable-quotes-from-former-addicts/

8. Frank, D., Mateu-Gelabert, P., Guarino, H., Bennett, A., Wendel, T., Jessell, L., & Teper, A. (2015). High risk and little knowledge: overdose experiences and knowledge among young adult nonmedical prescription opioid users. *The International journal on drug policy*, *26*(1), 84–91. https://doi.org/10.1016/j.drugpo.2014.07.013

9. Harm Reduction Coalition. (n.d.). Overdose Risk & Prevention. *National Harm Reduction Coalition.* http://harmreduction.org/issues/overdose-prevention/overview/overdose-basics/opioid-od-risks-prevention/

10. Hedegaard, H., Warner, M., & Miniño, A. M. (2017). Drug overdose deaths in the United States, 1999–2016. *Centers for Disease Control and Prevention*. https://www.cdc.gov/nchs/products/databriefs/db294.htm

11. Kosten, T. R., & George, T. P. (2002). The neurobiology of opioid dependence: implications for treatment. *Science & practice perspectives*, *1*(1), 13–20. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2851054/

12. National Academies of Sciences, Engineering, and Medicine. (2017). Pain management and the opioid epidemic: Balancing societal and individual benefits and risks of prescription opioid use. *National Academies Press.* https://www.ncbi.nlm.nih.gov/books/NBK458661/

13. Park, T. W., Lin, L. A., Hosanagar, A., Kogowski, A., Paige, K., & Bohnert, A. S. (2016). Understanding risk factors for opioid overdose in clinical populations to inform treatment and policy. *Journal of Addiction Medicine, 10*(6), 369–381. https://pdfs.semanticscholar.org/9c2b/53dafda25cf06f611772777c143f0f3e093f.pdf

14. Rowe, C., Santos, G., Behar, E., & Coffin, P.O. (2016). Correlates of overdose risk perception among illicit opioid users. *Drug and Alcohol Dependence, 159*, 234–239. https://www.sciencedirect.com/science/article/abs/pii/S0376871615018335

15. SAMHSA's Center for the Application of Prevention Technologies. (2020). Addressing opioid overdose: Understanding risk factors and prevention strategies. *Education Development Center, Inc.* https://solutions.edc.org/sites/default/files/Addressing-Opioid-Overdose-Understanding-Risk-Factors-Prevention-Strategies_1.pdf

16. SAMHSA's Center for the Application of Prevention Technologies. (2018). Addiction as a disease—Not a moral failure [video]. *Education Development Center, Inc.* https://www.youtube.com/watch?v=kGwo-CMTcVs&list=PLBXgZMI_zqfSx1TQTzbWjoFqJitZ1CBgK&index=40

17. United Nations Office on Drugs and Crime. (2013). Opioid overdose: Preventing and reducing opioid overdose mortality. *United Nations Office on Drugs and Crime*. https://www.unodc.org/docs/treatment/overdose.pdf

18. Webster, L. R., Cochella, S., Dasgupta, N., Fakata, K. L., Fine, P. G., Fishman, S. M., Grey, T., Johnson, E. M., Lee, L. K., Passik, S. D., Peppin, J., Porucznik, C. A., Ray, A., Schnoll, S. H., Stieg, R. L., & Wakeland, W. (2011). An analysis of the root causes for opioid-related overdose deaths in the United States. *Pain medicine (Malden, Mass.)*, *12 Suppl 2*, S26–S35. https://doi.org/10.1111/j.1526-4637.2011.01134.x

19. World Health Organization. (2021, August 04). Opioid overdose. *World Health Organization*. https://www.who.int/news-room/fact-sheets/detail/opioid-overdose

APPENDIX: DESCRIPTIONS OF DATA SOURCES

- **Automated Reports and Consolidated Ordering System (ARCOS):** Manufacturers and distributors use this national data system to report controlled substances transactions to the Drug Enforcement Agency. Available at: https://www.deadiversion.usdoj.gov/arcos/retail_drug_summary/

- **Behavioral Risk Factor Surveillance System (BRFSS):** Maintained by the Centers for Disease Control and Prevention (CDC), BRFSS is a state-based system of telephone health surveys that collects information on health risk behaviors, preventive health practices, and health care access primarily related to chronic disease and injury. Available at: https://www.cdc.gov/brfss/index.html

- **Electronic medical records:** Electronic medical records contain diagnoses that may be used to collect data on opioid-related disorders and prescriptions. Access to medical records may vary by state; data use agreements may need to be set in place in order to access this information.

- **Hospital discharge databases:** These state databases collect patient-level hospital discharge data on emergency department, outpatient surgery, same-day surgery, and inpatient encounters. Collected information includes demographic characteristics, diagnosis and procedure codes, and billing information and charges for services. For information on accessing these data, contact your state health department. Some hospital data is also available from the Healthcare Cost and Utilization Project: https://www.ahrq.gov/research/data/hcup/index.html

- **Insurance billing data:** These data can include information on diagnoses and prescriptions related to opioid use. They can be obtained from hospital systems or the insurance company itself. For Medicare/Medicaid patients, these data can also be obtained from the state. Access to billing data varies by state and may require a data use agreement.

- **Law enforcement data:** These include state and local data on criminal activity related to opioid misuse. Relevant indicators include opioid-related arrests, opioid-related convictions, drug seizures, incarceration data, and the number of times emergency services are called to address an opioid overdose. Data availability may vary by state. For information on accessing these data, contact your state department of public safety.

- **Medicare/Medicaid billing data:** These data provide information on medical billing, including number of opioid claims; utilization and payments for procedures or services; Part D prescription drugs provided by specific hospitals, physicians, and pharmacies;

International Classification of Diseases (ICD) codes associated with opioid prescriptions; and patient demographic and geographic information. Data availability varies by state. For information on accessing these data, contact your state health department.

- **Medicare Part D Opioid Prescribing Mapping Tool**: Developed by the Centers for Medicare and Medicaid Services and the U.S. Department of Health and Human Services, this tool matches de-identified Medicare Part D opioid prescription claims to state-, county-, and zip code-level geographic data. It also provides the number and percentage of opioid claims at the community level. Available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Provider-Charge-Data/OpioidMap.html

- **Monitoring the Future (MTF):** Initiated by the University of Michigan, this national survey examines the behaviors, attitudes, and values of high school students, college students, and young adults, including those related to opioid misuse. Available at: http://www.monitoringthefuture.org/

- **National Health and Nutrition Examination Survey (NHANES):** Initiated by the CDC, this national survey assesses the health and nutritional status of adults and children using interviews and physical examinations. Available at: https://www.cdc.gov/nchs/nhanes/index.htm

- **National Poison Data System:** Dating back to 1983, this national database contains more than 62 million exposure cases and substance-specific data, including data on prescription and illicit opioid use. Data are entered using electronic health record collection systems that have mandatory common data elements and reporting requirements. Available at: https://www.aapcc.org/national-poison-data-system

- **National Survey on Drug Use and Health (NSDUH):** Initiated by the Substance Abuse and Mental Health Services Administration (SAMHSA) and U.S. Department of Health and Human Services, this survey assesses the use of tobacco, alcohol, illicit drugs, and mental health in the United States. Available at: https://nsduhwebesn.rti.org/respweb/homepage.cfm

- **National Emergency Medical Services Information System (NEMSIS):** This is the national system used to collect, store, and share emergency medical services (EMS) data from the U.S. states and territories. NEMSIS develops and maintains a national standard for how patient care information resulting from pre-hospital EMS activations is documented. Available at: https://nemsis.org/what-is-nemsis/

- **Overdose Detection Mapping Application Program (ODMAP):** ODMAP provides near real-time suspected overdose data across jurisdictions to support public safety and public health efforts to mobilize an immediate response to a sudden increase, or spike, in overdose events. It links first responders and relevant record management systems to a mapping tool to track overdoses to stimulate real-time response and strategic analysis across jurisdictions. Available at: https://nemsis.org/what-is-nemsis/

- **Prescription drug monitoring programs (PDMPs):** These statewide electronic data systems collect, analyze, and make available prescription data on controlled substances. Depending on the state, data may include information on the types, dosages, and quantities of medications dispensed, as well as prescriber, pharmacy, and patient identifiers. For information on accessing these data, contact your state's PDMP or visit the PDMP Training and Technical Assistance Center at http://www.pdmpassist.org/

- **Treatment Episode Data Set (TEDS):** Maintained by SAMHSA and the Center for Behavioral Health Statistics and Quality, this national census data system provides information on annual admissions and annual discharges from treatment facilities. TEDS also contains patient demographic characteristics. Available at: https://www.samhsa.gov/data/data-we-collect/teds-treatment-episode-data-set

- **Youth Risk Behavior Surveillance Survey (YRBSS):** Initiated by the CDC, this survey assesses adolescent health risk and health protective behaviors, including smoking, drinking, drug use, diet, and physical activity. Available at: https://www.cdc.gov/healthyyouth/data/yrbs/overview.htm