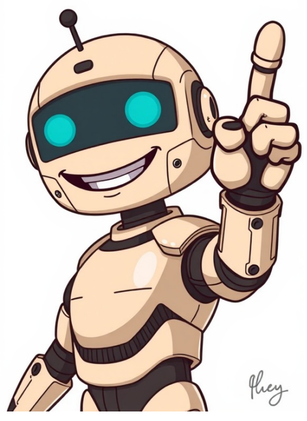
I'm not a bot



Yes, addiction is a treatable disorder. Research on the science of addiction and the treatment of substance use disorders has led to the development of research-based methods that help people to stop using drugs and resume productive lives, also known as being in recovery.Can addiction be cured?Like treatment for other chronic diseases such as heart disease or asthma, addiction treatment is not a cure, but a way of managing the condition. Treatment enables people to counteract addiction's disruptive effects on their brain and behavior and regain control of their lives. These images showing the density of dopamine transporters in the brain illustrate the brain's remarkable ability to recover, at least in part, after a long abstinence from drugsin this case, methamphetamine.51Does relapse to drug use mean treatment has failed?No. The chronic nature of addiction means that for some people relapse, or a return to drug use after an attempt to stop, can be part of the process, but newer treatments are designed to help with relapse prevention. Relapse rates for drug use are similar to rates for other chronic medical illnesses. If people stop following their medical treatment plan, they are likely to relapse. Relapse rates for people treated for substance use disorders are compared with those for people treated for high blood pressure and asthma. Relapse is common and similar across these illnesses. Therefore, substance use disorders should be treated like any other chronic illness. Relapse serves as a sign for resumed, modified, or new treatment.Treatment of chronic diseases involves changing deeply rooted behaviors, and relapse doesnt mean treatment has failed. When a person recovering from an addiction relapses, it indicates that the person needs to speak with their doctor to resume treatment, modify it, or try another treatment.52While relapse is a normal part of recovery, for some drugs, it can be very dangerouseven deadly. If a person uses as much of the drug as they did before quitting, they can easily overdose because their bodies are no longer adapted to their previous level of drug exposure. An overdose happens when the person uses enough of a drug to produce uncomfortable feelings, life-threatening symptoms, or death.What are the principles of effective treatment?Research shows that when treating addictions to opioids (prescription pain relievers or drugs like heroin or fentanyl), medication should be the first line of treatment, usually combined with some form of behavioral therapy or counseling. Medications are also available to help treat addiction to alcohol and nicotine.Additionally, medications are used to help people detoxify from drugs, although detoxification is not the same as treatment and is not sufficient to help a person recover. Detoxification alone without subsequent treatment generally leads to resumption of drug use.For people with addictions to drugs like stimulants or cannabis, no medications are currently available to assist in treatment, so treatment consists of behavioral therapies. Treatment should be tailored to address each patient's drug use patterns and drug-related medical, mental, and social problems.Discoveries in science lead to breakthroughs in drug use treatment.What medications and devices help treat drug addiction?Different types of medications may be useful at different stages of treatment to help a patient stop abusing drugs, stay in treatment, and avoid relapse.Treating withdrawal. When patients first stop using drugs, they can experience various physical and emotional symptoms, including restlessness or sleeplessness, as well as depression, anxiety, and other mental health conditions. Certain treatment medications and devices reduce these symptoms, which makes it easier to stop the drug use.Staying in treatment. Some treatment medications and mobile applications are used to help the brain adapt gradually to the absence of the drug. These treatments act slowly to help prevent drug cravings and have a calming effect on body systems. They can help patients focus on counseling and other psychotherapies related to their drug treatment.Preventing relapse. Science has taught us that stress cues linked to the drug use (such as people, places, things, and moods), and contact with drugs are the most common triggers for relapse. Scientists have been developing therapies to interfere with these triggers to help patients stay in recovery.OpioidMethadoneBuprenorphineExtended-release naltrexoneLofexidineNicotineNicotine replacement therapies (available as a patch, inhaler, or gum)BupropionVareniclineAlcoholNaltrexoneDisulfiramAcamprosateHow do behavioral therapies treat drug addiction?Behavioral therapies help people in drug addiction treatment modify their attitudes and behaviors related to drug use. As a result, patients are able to handle stressful situations and various triggers that might cause another relapse. Behavioral therapies can also enhance the effectiveness of medications and help people remain in treatment longer.Cognitive-behavioral therapy seeks to help patients recognize, avoid, and cope with the situations in which they're most likely to use drugs.Contingency management uses positive reinforcement such as providing rewards or privileges for remaining drugfree, for attending and participating in counseling sessions, or for taking treatment medications as prescribed.Motivational enhancement therapy uses strategies to make the most of people's readiness to change their behavior and enter treatment.Family therapy helps people (especially young people) with drug use problems, as well as their families, address influences on drug use patterns and improve overall family functioning.Twelve-step facilitation (TSF) is an individual therapy typically delivered in 12 weekly session to prepare people to become engaged in 12-step mutual support programs. 12-step programs, like Alcoholic Anonymous, are not medical treatments, but provide social and complementary support to those treatments. TSF follows the 12-step themes of acceptance, surrender, and active involvement in recovery.Treatment must address the whole person.How do the best treatment programs help patients recover from addiction? Stopping drug use is just one part of a long and complex recovery process. When people enter treatment, addiction has often caused serious consequences in their lives, possibly disrupting their health and how they function in their family lives, at work, and in the community.Because addiction can affect so many aspects of a person's life, treatment should address the needs of the whole person to be successful. Counselors may select from a menu of services that meet the specific medical, mental, social, occupational, family, and legal needs of their patients to help in their recovery.For more information on drug treatment, see Principles of Drug Addiction Treatment: A Research-Based Guide, and Principles of Adolescent Substance Use Disorder Treatment: A Research-Based Guide. NIDA. 2020, July 6. Treatment and Recovery. Retrieved from on 2025, November 29 NIDA. "Treatment and Recovery." National Institute on Drug Abuse, 6 Jul. 2020, Accessed 29 Nov. 2025. NIDA. Treatment and Recovery. National Institute on Drug Abuse website. . July 6, 2020 Accessed November 29, 2025. The National Institutes of Health (NIH) Helping to End Addiction Long-term Initiative or NIH HEAL Initiative, was launched in 2018 to accelerate scientific solutions to the devastating addiction and overdose crisis in the United States. This NIH-wide Initiative is jointly led by the National Institute on Drug Abuse (NIDA) and the National Institute of Neurological Disorders and Stroke (NINDS).NIDA leads HEAL research efforts concerning opioid use disorder (OUD) and opioid and other drug related overdoses, and research at the intersection of pain and OUD. NINDS, in collaboration with the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) and the National Center for Complementary and Integrative Health (NCCIH) coordinates HEAL research efforts across NIH Institutes and Centers, including NIDA, to develop safe and effective pain treatment and prevention strategies.1 In the day-to-day program leadership and management, virtually every NIH Institute, Center, and Office (ICO) is involved in some capacity, with 21 ICOs leading and managing different HEAL programs. HEAL collaborations also extend across the U.S. Department of Health and Human Services, community organizations, research institutions, and the private sector.About the NIDA HEAL Strategic PlanThis Strategic Plan reflects research priorities that will inform the OUD and the opioid and other drug overdose arm of the HEAL Initiative led by NIDA. It was developed with input from the extramural scientific community and other NIDA stakeholders via a Request for Information (NOT-NS-24-106),2 and input from NIDA staff via institute-wide strategic planning discussions. This plan complements the broader body of research NIDA supports in service of its mission to advance science on drug use and addiction and apply that knowledge to improve individual and public health. The NIDA wide strategic plan is available here: 2022-2026 NIDA Strategic Plan.IntroductionSince its launch with the support of Congress in 2018, the NIH HEAL Initiative has made the nations largest ever investment in research to end the national overdose crisis. To date, both NIDA and NINDS have administered a cumulative $3.9 billion to fund over 2,200 research projects in all 50 states and the District of Columbia and have driven innovative solutions to help address opioid use disorders, overdoses, and chronic pain by promoting collaborative science and data sharing, advancing implementation research laser-focused on improved patient care, and pushing the boundaries of rapid therapeutic and diagnostic development. NIDA has led more than half of this work, with an investment of $2.1 billion in 1,200 research projects since the inception of HEAL.Drug overdoses in the United States started to rise beginning in the late 1990s, following increased prescribing of opioid analgesics to address the crisis from untreated chronic pain. Overprescription of these medications along with poorly managed pain, led to a growing problem of OUD and opioid-related overdose fatalities. Opioid overdoses accelerated after 2010, when people with OUD increasingly turned to heroin as a cheaper alternative to prescription opioids. This was followed by the influx of fentanyl a very potent synthetic opioid, and more recently expanded into a polysubstance overdose crisis. Currently, fentanyl and other synthetic opioids other than methadone, frequently in combination with cocaine and methamphetamine, are driving overdose fatalities, which in 2023 led to 105,007 deaths.3 However, our collective national investment to curb the overdose crisis is producing results. The escalation of drug overdose deaths began to decelerate in 2021 and recent data from the Centers for Disease Control and Prevention show a steep decline beginning in 2023 and continuing into 2024. Nonetheless, overdose fatalities still account for tens of thousands of deaths annually4 and there are nearly 9 million Americans ages 12 and older who misused opioids in the past year, and an estimated 5.7 million with OUD, which is appraised to be an undercount.5,6,7 In parallel, chronic pain affects 50 million adults in the United States with nearly 20 million living daily with chronic pain that interferes with their lives and if improperly treated, puts them at risk for illicit opioid misuse alongside the risk of OUD and overdoses.8The NIH HEAL Initiative will continue to address these challenges using a multifaceted evidence-based approach that brings together scientists, healthcare providers, patient advocates, community members, the private sector, and multiple levels of government all sharply focused on developing and deploying scientific solutions with the ultimate goal of preventing all overdoses. Toward that goal, this Strategic Plan reflects NIDAs commitment to ensure that HEAL-supported research will remain focused on efforts to accelerate scientific solutions to urgently address the overdose crisis and prevent it from happening again.NIDA HEAL Profile (FY 2024)Year Established: 2018FY 2024 Budget: $355 millionFY 2024 Supported Investigators: >250FY 2024 Newly Funded: Early-Stage Investigators: 16FY 2024 Training Awards: >10FY 2024 Funded Research Projects:>280 FY 2024 Research Focus Areas (% Budget)Novel Therapeutics for Opioid Use Disorders and OverdosesTranslation of Research to Practice for the Treatment of Opioid Use DisordersEnhanced Outcomes for Infants and Children Exposed to OpioidsNew Strategies to Prevent and Treat Opioid Use DisordersOpioid Use Disorders x Pain, Data, Training (previously Cross-Cutting)Small Business SBIR and STTR SupportNIDA HEAL Research PrioritiesThis HEAL Initiative strategic plan for OUD and overdoses includes two core research objectives around which NIDA will prioritize HEAL research investments over the next 5 years:(1) Advance research to prevent and treat OUD and overdoses including from polysubstance use disorders.(2) Advance cross-cutting research to prevent and treat OUD and overdoses in the context of chronic pain and other mental health conditions.These research objectives incorporate other cross-cutting goals, including enhancing womens and childrens health; addressing public health challenges across the lifespan; promoting collaborative science; and leveraging data science for biomedical discovery.Within these core objectives are the following five research goals, each with associated specific aims:Develop and test novel prevention, treatment, and recovery strategies for OUD, other substance use disorders (SUDs), and overdoses.Advance research to prevent and treat polysubstance use disorders (PolySUD) and drug overdoses.Develop prevention interventions for high-risk populations impacted by the overdose crisis.Address treatment and recovery challenges associated with OUD co-morbidities and with polysubstance misuse.Integrate existing and newly generated data to advance data science in OUD and overdose, including for the identification of risk biomarkers, predictive models of treatment responses, and new -therapeutic targets. Figure 1. NIDA HEAL Strategic Vision OverviewObjective 1: Advance Research on the Prevention and Treatment of OUD and other SUDs that Contribute to Overdoses, and on Overdose TreatmentsEffective prevention strategies can reduce the likelihood that individuals at risk for substance use begin to misuse opioids or other drugs and develop OUD or other SUDs that can lead to overdose. For those who do develop OUD or other SUDs, effective treatments are critical to reduce their risk of overdose. HEAL research strives to develop new or improved prevention and treatment strategies for OUD and other SUDs, including PolySUD. These interventions must be tailored to the severity of ones overall risk and the range of settings in which they can be deployed.Goal 11: Develop and Test Novel Prevention, Treatment, and Recovery Strategies for OUD, Other SUDs, and Overdoses.The cascade of care for addiction and overdose begins with primary prevention and proceeds through treatment into sustained recovery. Prevention, treatment, and recovery are all central to national and community-level efforts to address substance use and the serious risks associated with it, including disease, injury, overdose, and death. HEAL research will support the development and implementation of interventions across the continuum of care for individuals at all stages of life, including for adolescents at risk for opioid misuse and OUD.Specific Aims:Develop, test, and implement evidence-based interventions and services aligned with the cascade of care for OUD and overdose, including prevention, treatment, and recovery support services.Develop interventions to detect and prevent prescription pill misuse (including counterfeit pills) among youth and the negative consequences associated with it, including overdoses.Develop interventions for adolescents with OUD, including mild OUD, and test the safety and efficacy of existing medications for opioid use disorder (MOUD) to treat moderate to severe OUD in this population.Streamline timelines for promising and accessible medications, devices, and other therapeutics for OUD and other SUDs (including therapies to reduce pain and novel abuse resistant opioid formulations) to advance through FDA approval.Support research to establish alternative endpoints to abstinence as treatment targets for OUD or other SUDs that contribute to overdoses, such as clinical endpoints that measure withdrawal, depression, craving, or use disorder severity.Support research to characterize long-term trajectories and outcomes for individuals with OUD including those associated with recovery and the factors that impact these outcomes.Analyze administrative federal and private data (i.e., Centers for Medicare & Medicaid Services, IQVIA) to understand geographical differences in treatment utilization for OUD, including access to MOUD, and develop dashboards to monitor regional needs and changes in real time.Goal 12: Advance Research on Prevention and Treatment of Polysubstance Use, Polysubstance Use Disorders (PolySUD) and Drug Overdoses.In the past 10 years there have been significant increases in overdose deaths that involve combination of fentanyl with various drugs. Most notable are combinations of fentanyl with cocaine, and/or methamphetamine, which among all fatal drug combinations have shown the steepest increases.9 Drug dealers have increasingly mixed fentanyl with other illicit drugs in recent years, which expanded the pool of people who are at risk for overdosing and made it harder to reverse overdoses. Drug combinations also complicate the treatment of OUD and other SUDs, as the severe physical withdrawal from drugs like fentanyl and xylazine render MOUD harder to implement. Research is needed to develop interventions to prevent and treat polysubstance use and related overdoses.Specific Aims:Support research on the mechanisms of toxicity of drugs, by themselves or in combination, including mechanisms of polysubstance overdose.Develop more sensitive and broadly accessible technologies for quantifying drugs in biological samples and for measuring the drugs present in confiscated drugs or drug use paraphernalia.Develop therapeutics for PolySUD, such as medication and neuromodulation approaches that address common targets (i.e., D3 receptors, GLP-1 receptors, orexin receptors) and/or circuits relevant to addiction irrespective of specific drug type. Such interventions could, for example, be targeted to strengthen self-regulation, buffer negative emotions, and/or modulate stress response among other goals.Develop therapeutics in addition to opioid antagonists for polysubstance overdoses, such as drug sequestrants, medications to stimulate the respiratory center, and devices for automatic respiratory stimulation.Explore health outcomes and drug misuse trajectories of individuals with polysubstance use including those with PolySUD.Goal 13: Develop Prevention Interventions for High-Risk Populations Impacted by the Overdose Crisis.From its inception, the opioid overdose crisis manifested itself differently across geographic locations and demographic groups. Whereas overdose mortality rates were initially higher among White American men and women, particularly those living in rural or semirural areas, currently overdoses are highest among American Indian/Alaska Native American men and older Black American men. The factors contributing to these disparities have shifted as the drugs driving overdoses changed from opioid medications to heroin, fentanyl, and polysubstances. Common contributing factors in all the waves of the overdose epidemic are having a low-income or disability (including a mental disorder), lacking employment or housing, and having a history of incarceration.10Specific Aims:Identify the key characteristics and approaches implemented by communities that have been able to reduce overdose death rates and apply those lessons learned to other communities.Utilize data, monitoring, technology, and Artificial Intelligence (AI) to identify and inform the deployment of interventions for populations at high-risk of opioid use and overdose.Increase inclusion of people with lived and living experience of substance use, especially those who are homeless and in law enforcement settings, in the research process.Objective 2: Advance research to prevent and treat OUD and overdoses in the context of chronic pain and other mental health disordersPeople with OUD and other SUDs are much more likely to have other medical conditions, including chronic pain and mental health disorders, than the general population. This comorbidity is associated with worse clinical outcomes both for OUDs and for the conditions with which they co-occur. The co-occurrence of opioid use and pain is a particular area of focus for the HEAL Initiative given the early role of prescription opioid misuse in driving the overdose crisis and the continued use of alcohol, cannabis and prescription opioids for pain relief.Goal 21: Address Treatment and Recovery Challenges Associated with Opioid Use Disorder Co-morbidities and with Polysubstance Misuse.Managing OUD and co-occurring conditions can be especially challenging for healthcare providers. Treating PolySUD and other medical comorbidities requires carefully coordinated care. Indeed, depending on the conditions a patient is diagnosed with, healthcare providers may need to balance the prescription of necessary medications with risk of addiction to those same medications, as may be the case for patients with OUD and chronic pain. Therefore, treating OUD patients with medical comorbidities often requires a multidisciplinary approach that may involve addiction counselors, other mental health professionals, pain specialists, and other providers. Research is needed to develop optimal treatments and treatment delivery models for this population.Specific Aims:Identify common neural circuits involved in OUD, pain, and mental health disorders.Evaluate the potential of existing therapeutics for conditions that share neural circuitry with OUD as OUD treatments. For example, evaluate the potential of GLP-1 agonist drugs used for treating diabetes and obesity for the treatment of OUD and PolySUD.Advance integrated models of care to address OUD and psychiatric and medical co-morbidities, including management of severe chronic pain in patients with OUD.Goal 22: Integrate Existing and Newly Generated Data to Advance Data Science in OUD and Overdoses, Including for the Identification of Risk Biomarkers, Predictive Models of Treatment Responses, and New Medication Targets.HEAL will support research that leverages and integrates a variety of data sets including large-scale clinical data (such as from electronic health records (EHR), mortality records, and pharmacy dispensing databases) and tools to provide more accurate, real-time assessments on OUD, overdose and chronic pain management and its changing dynamics. Data should be accessible to inform targeted solutions for communities in need. HEAL researchers should make their data more findable, accessible, interoperable, and re-useable (FAIR), with the goal of fostering discovery and contributing to the HEAL Data Ecosystem.11Specific Aims:Develop methods to capture data on opioid usage and emerging new substances on a real-time or near real-time basis.Improve technologies to mine or automatically extract data from EHR, clinical trial data, digital health devices, social media, and other observational and experimental data sources.Optimize clinical data standards to help advance AI and other research analysis tools toward addressing the challenges of OUD, overdoses and chronic pain management.References NIDA. 2025, July 2. NIDA HEAL Opioid Use Disorder and Overdose Strategic Plan FY 2025-2029. Retrieved from on 2025, November 30 NIDA. "NIDA HEAL Opioid Use Disorder and Overdose Strategic Plan FY 2025-2029." National Institute on Drug Abuse, 2 Jul. 2025, Accessed 30 Nov. 2025. NIDA. NIDA HEAL Opioid Use Disorder and Overdose Strategic Plan FY 2025-2029. National Institute on Drug Abuse website. . July 2, 2025 Accessed November 30, 2025. Substance use disorders are chronic, treatable disorders that affect a persons brain and behaviors, but from which people can recover.There are safe, effective medications and psychotherapies (behavioral therapy, counseling) for treating substance use disorders, symptoms such as withdrawal, and related health problems.NIDA supports and conducts research to develop and implement safe and effective treatments for substance use disorders. This includes research on new medications, brain stimulation, psychotherapies, and other innovative approaches. NIDA. 2025, June 9. Treatment. Retrieved from on 2025, November 26 NIDA. "Treatment." National Institute on Drug Abuse, 9 Jun. 2025, Accessed 26 Nov. 2025. NIDA. Treatment. National Institute on Drug Abuse website. . June 9, 2025 Accessed November 26, 2025. Expand for more informationAre you or someone you know experiencing severe symptoms or in immediate danger? Please seek immediate medical attention by calling 9-1-1 or visiting an Emergency Department. Poison control can be reached at 1-800-222-1222 or www.poison.org. Are you or someone you know experiencing a substance use and/or mental health crisis or any other kind of emotional distress? Please call or text 988 or chat www.988lifeline.org to reach the 988 Suicide & Crisis Lifeline. 988 connects you with a trained crisis counselor who can help.For referrals to substance use and mental health treatment programs, call the Substance Abuse and Mental Health Administration (SAMHSA) National Helpline at 1-800-662-HELP (4357) or visit www.FindTreatment.gov to find a qualified healthcare provider in your area.For other personal medical advice, please speak to a qualified health professional. Find more health resources on USA.gov. The emergency and referral resources listed above are available to individuals located in the United States and are not operated by the National Institute on Drug Abuse (NIDA). NIDA is a biomedical research organization and does not provide personalized medical advice, treatment, counseling, or legal consultation. Information provided by NIDA is not a substitute for professional medical care or legal consultation. Opioid use disorder is a chronic, treatable condition. There are effective, FDA-approved medications that can help people stop or reduce opioid use, including methadone, buprenorphine, and naltrexone. The medication lofexidine helps ease opioid withdrawal symptoms.Medications for opioid use disorder reduce the risk of overdose deaths and of behaviors that increase the risk of infectious disease, including HIV and hepatitis C virus. However, fewer than 1 in 5 people with opioid use disorder are treated with these medications.Medications for opioid use disorder are also safe and effective during pregnancy and breastfeeding. Many people who are taking medications for opioid use disorder have acute painfor example, after surgeryor live with chronic pain.38 Pain management for these people requires special consideration. For example, some medications for opioid use disorder may make other opioid pain medications less effective in relieving pain.39Both methadone and buprenorphine can reduce pain. So, people with acute or chronic pain may be advised to continue using these medications. However, naltrexone blocks the effects of opioids. Health care professionals may advise that people treated with naltrexone should discontinue the medication before surgery if they are likely to need treatment with opioid pain medications afterwards.40In all patients with opioid use disorder who have acute or chronic pain, the American Society of Addiction Medicine recommends that medication-free treatments, such as physical therapy or behavioral therapy, or treatment with non-opioid pain medications should be tried first.40, 41NIDA plays a leading role in the National Institutes of Health HEAL (Helping to End Addiction Long-term) Initiative, an effort to develop new scientific solutions to the overdose epidemic, including opioid and stimulant use disorders, and the crisis of chronic pain. NIDA. 2025, March 20. Medications for Opioid Use Disorder. Retrieved from on 2025, November 29 NIDA. "Medications for Opioid Use Disorder." National Institute on Drug Abuse, 20 Mar. 2025, Accessed 29 Nov. 2025. NIDA. Medications for Opioid Use Disorder. National Institute on Drug Abuse website. . March 20, 2025 Accessed November 29, 2025. Expand for more informationAre you or someone you know experiencing severe symptoms or in immediate danger? Please seek immediate medical attention by calling 9-1-1 or visiting an Emergency Department. Poison control can be reached at 1-800-222-1222 or www.poison.org. Are you or someone you know experiencing a substance use and/or mental health crisis or any other kind of emotional distress? Please call or text 988 or chat www.988lifeline.org to reach the 988 Suicide & Crisis Lifeline. 988 connects you with a trained crisis counselor who can help.For referrals to substance use and mental health treatment programs, call the Substance Abuse and Mental Health Administration (SAMHSA) National Helpline at 1-800-662-HELP (4357) or visit www.FindTreatment.gov to find a qualified healthcare provider in your area.For other personal medical advice, please speak to a qualified health professional. Find more health resources on USA.gov. The emergency and referral resources listed above are available to individuals located in the United States and are not operated by the National Institute on Drug Abuse (NIDA). NIDA is a biomedical research organization and does not provide personalized medical advice, treatment, counseling, or legal consultation. Information provided by NIDA is not a substitute for professional medical care or legal consultation. A study supported by the National Institutes of Health (NIH) finds that individuals who received medication for opioid use disorder (MOUD) while incarcerated were significantly more likely to continue treatment six months after release than those who did not receive MOUD. The study also found that receiving MOUD in jail was associated with a 52% lower risk of fatal opioid overdose, a 24% lower risk of non-fatal opioid overdose, a 56% lower risk of death from any cause, and a 12% lower risk of reincarceration after release. These outcomes underscore the importance of providing MOUD treatment during incarceration.Published in The New England Journal of Medicine, the study analyzed data from 6,400 people with probable opioid use disorder who were incarcerated in seven Massachusetts county jails between September 2019 and December 2020. Of these, 42% received MOUD while in jail, while 58% did not. Researchers monitored treatment engagement, opioid overdose, reincarceration, and mortality for all participants for up to six months after release.These findings demonstrate the importance of providing medications to treat opioid use disorder in correctional settings, said Nora D. Volkow, M.D., Director of NIDA. Offering effective opioid treatment to people in jail is a critical step toward addressing the opioid crisis, promoting recovery, saving lives and reducing reincarceration. Its a win-win for public health.The opioid epidemic remains a devastating public health challenge in the United States, contributing to more than 80,000 deaths in 2024 alone. People with opioid use disorder are overrepresented in jails compared to the general population. Despite their effectiveness, MOUD is available in only about 13% of U.S. jails and is often restricted to specific groups, such as pregnant women. This limited access contributes to forced withdrawal, increasing the risk of relapse and overdose post-release.Massachusetts has been especially impacted by the overdose epidemic, with fatal opioid-related overdoses quadrupling over the past two decades. In response, a 2018 state law mandated a four-year pilot program to provide all U.S. Food and Drug Administration-approved MOUDbuprenorphine, methadone, and naltrexonein five county jails, with two additional jails voluntarily joining the program. The law requires that individuals already receiving treatment for opioid use disorder continue it during detention, begin treatment before release when appropriate, and be connected to community care after release.To evaluate the impact of the pilot program, the Massachusetts Department of Public Health partnered with the Massachusetts Justice Community Opioid Innovation Network (MassJCOIN) and participating jails to conduct a comprehensive study tracking post-release outcomes. Researchers collected data directly from incarcerated individuals and extracted information from jail administrative and clinical records. These data were integrated with the Massachusetts Public Health Data Warehouse, which links over 35 state databases to track treatment for substance use disorders, incarceration, mortality, and other public health indicators. This linkage enabled a robust analysis of the programs impact on key post-release outcomes. Treatment in jail was strongly associated with better outcomes after release. Within the first 30 days, 60.2% of those who received MOUD in jail, initiated treatment in the community, compared to only 17.6% of individuals who werent treated. Half of the group treated in jail stayed on medication for at least 75% of the first 90 days after release, while only 12.3% of the untreated group did the same. Six months after release, 57.5% of those who received treatment in jail continued receiving MOUD, compared to just 22.8% of those who did not. Most people treated in jail received buprenorphine (67.9%) followed by methadone (25.7%) and naltrexone (6.5%).The Massachusetts initiative represents a model for how jails can play a vital role in addressing the opioid epidemic in the community, said Peter D. Friedmann, M.D., M.P.H., lead author and addiction medicine physician at the University of Massachusetts Chan Medical School. Senior author Elizabeth A. Evans, PhD, a public health professor from University of Massachusetts-Amherst added, establishing these types of programs in local jails is a powerful and effective strategy for engaging and retaining people in treatment and reducing overdose deaths after release.Future research should explore the generalizability of these findings to other correctional systems, as well as how outcomes differ across population subgroups and by the type of medication received. Research to examine which strategies for implementing MOUD in jails are most effective in supporting recovery after release are also needed.This research was supported by the Justice Community Opioid Innovation Network (JCOIN), a nationwide research program that tests strategies to expand effective treatment, recovery, and related services for individuals with opioid use disorder involved in the criminal justice system. JCOIN is funded by the NIHs National Institute on Drug Abuse as part of the NIH Helping to End Addiction Long-term (NIH HEAL Initiative).For more information on substance and mental health treatment programs in your area, call the free and confidential National Helpline 1-800-662-HELP (4357) or visit FindTreatment.gov. Anyone who needs assistance with the first steps in pursuing help can find guidance at FindSupport.gov.Reference:PD Friedmann, et al. Medications for Opioid Use Disorder in County Jails: Outcomes After Release. New England Journal of Medicine. DOI: 10.1056/NEJMsa2415987 (2025).There are effective treatments that support tobacco cessation, including both behavioral therapies and FDA-approved medications. FDA-approved pharmacotherapies include various forms of nicotine replacement therapy as well as bupropion and varenicline. Research indicates that smokers who receive a combination of behavioral treatment and cessation medications quit at higher rates than those who receive minimal intervention.37,40,162167 Interventions such as brief advice from a health care worker, telephone helplines, automated text messaging, and printed self-help materials can also facilitate smoking cessation.163 Cessation interventions utilizing mobile devices and social media also show promise in boosting tobacco cessation.168 It is important for cessation treatment to be as personalized as possible, as some people smoke to avoid negative effects of withdrawal while others are more driven by the rewarding aspects of smoking.The Surgeon Generals Report on Smoking Cessation, released in January 2020, offers evidence that smoking cessation is beneficial at any age, improves health status and enhances quality of life. It also reduces the risk of premature death and can add as much as a decade to life expectancy.The prevalence of tobacco use and dependence among adolescentsas well as the neurobiological impact and medical consequences of nicotine exposuresuggest that pediatric primary care settings should deliver tobacco cessation treatments to both youth and parents who use tobacco.169 Current clinical guidance does not recommend medications for adolescent tobacco cessation because of a lack of high-quality studies;170 however, a combination of behavioral treatmentssuch as motivational enhancement and CBThas shown promise for helping adolescents quit tobacco.171 More well-designed smoking cessation studies need to be conducted with adolescent smokers, particularly in the area of pharmacologic treatments for nicotine dependence.170Behavioral TreatmentsBehavioral counseling is typically provided by specialists in smoking cessation for four to eight sessions.40 Both in-person and telephone counseling have been found beneficial for patients who are also using cessation medications.164 A variety of approaches to smoking cessation counseling are available.Cognitive Behavioral Therapy (CBT)CBT helps patients identify triggersthe people, places, and things that spur behaviorand teaches them relapse-prevention skills (e.g., relaxation techniques) and effective coping strategies to avoid smoking in the face of stressful situations and triggers.172,173 A study that compared CBT and basic health education observed that both interventions reduced nicotine dependence.174 However, another study found that among smokers trying to quit with the nicotine replacement therapy (NRT) patch, patients who participated in six sessions of intensive group CBT had better quit rates than those who received six sessions of general health education.175Motivational Interviewing (MI)In MI, counselors help patients explore and resolve their ambivalence about quitting smoking and enhance their motivation to make healthy changes. MI is patient-focused and nonconfrontational, and providers point out discrepancies between patients goals or values and their current behaviors. They adjust to patients resistance to change and support self-efficacy and optimism.173 Studies of MI suggest that this intervention results in higher quit rates than brief advice to stop smoking or usual care.176MindfulnessIn mindfulness-based smoking cessation treatments, patients learn to increase awareness of and detachment from sensations, thoughts, and cravings that may lead to relapse.177 In this therapy, patients purposely attend to the thoughts that trigger cravings and urges for tobacco and cognitively reframe them as expected and tolerable. Patients learn techniques that help them tolerate negative emotionsincluding stress and cravingswithout returning to tobacco use or other unhealthy behaviors.177 Interest in mindfulness-based treatments has increased during the past decade, and studies show that this approach benefits overall mental health and can help prevent relapse to smoking.178 However, well-controlled clinical trials are needed.Telephone support and quitlinesAs part of tobacco control efforts, all states offer toll-free telephone numbers (or quitlines) with smoking cessation counselors who provide information and support (800-QUIT-NOW or 800-784-8669). Studies of quitline interventions indicate that smokers who call quitlines benefit from these services,179 particularly when a counselor calls them back for multiple sessions.180 There is limited evidence on the optimal number of calls needed, but smokers who participated in three or more calls had a greater likelihood of quitting, compared with those who only received educational materials, brief advice, or pharmacotherapy alone.180 Quitlines have also been shown to help smokeless tobacco cessation.181 The U.S. Department of Health and Human Services provides a Smoking Quitline (877-44U-QUIT or 877-448-7848), as well as more information and tools for quitting (including text messages and other telephone-based support) at messaging, web-based services, and social media supportTechnology, including mobile phones, internet, and social media platforms can be used to provide smoking cessation interventions. These technologies have the power to increase access to care by extending the work of counselors and overcoming the geographical barriers that may deter people from entering treatment.A review of the literature on technology-based smoking cessation interventions (internet, personal computer, and mobile telephone) found that these supports can increase the likelihood of adults quitting, compared with no intervention or self-help information, and they can be a cost-effective adjunct to other treatments.182 A technology does not necessarily have to be recent or highly sophisticated to help boost cessation rates. For example, studies suggest that adults who receive encouragement, advice, and quitting tips via text-messagea capability on even the most basic mobile devicesshow improved quit rates compared with control programs.183,184Among adult tobacco users who called a state quitline, most selected an integrated phone/web cessation program in favor of a web-only intervention.185 Participants who chose the web-only option tended to be younger and healthier smokers, with a higher socioeconomic status. These participants tended to interact intensely with the site once, but did not re-engage as much as those who opted for the phone/web combination. A review of internet-based smoking cessation programs for adults suggested that interactive internet-based interventions that are tailored to individual needs can help people quit for 6 months or longer.186,187 Future research should determine the effectiveness of different technologies for smoking cessation support among populations that may be hard to reach, including those of low socioeconomic status and adults older than age 50.Technology-based cessation interventions are particularly relevant to young adults aged 18 to 25about 3.2 million of whom smoked daily in 2016.7 A systematic review and meta-analysis of published randomized trials of technology-based interventionsincluding computer programs, internet, telephone, and text messagingfor smoking cessation among this population found that they increased abstinence by 1.5 times that of comparison subjects.188 Researchers recommend embedding cessation interventions in commonly used social networking platforms,189 and there has been some exploratory work in this area. Results of a trial with a relatively small number of participants suggested that Facebook was an accessible, low-cost platform for engaging young adults considering cessation. However, the study pointed to challenges such as maintaining participation and retaining young people in the program.189 A randomized controlled trial has been designed to test a stage-based smoking cessation intervention on Facebook tailored for smokers aged 18 to 25. Participants will be recruited online, randomly assigned to a Facebook group according to their readiness to quit, and will receive tailored daily messages and weekly counseling. The study will assess the interventions impact on abstinence from smoking 3, 6, and 12 months after treatment, number of cigarettes smoked, quit attempts lasting 24 hours or more, and commitment to abstinence.190Given the risks associated with smoking during pregnancy, but also the challenges faced by all smokers when trying to quit, researchers have studied an array of approaches to improve cessation rates for this population. Many women are motivated to quit during pregnancy, but like other smokers, most will need assistance.Studies show that behavioral treatments are effective, whereas pharmacotherapies have only marginal success.191 A combination of incentives and behavioral counseling is most effective for pregnant women.192 Adding vouchers to routine care (which included free nicotine replacement therapy for 10 weeks and four weekly support phone calls) more than doubled cessation rates during pregnancy.193 Pooled results of behavioral intervention studies indicate that treatment reduced preterm births and the proportion of infants born with low birth weight, compared with usual care.194 This finding is supported by an analysis of pooled results from studies with economically disadvantaged pregnant smokers, which found that voucher-based incentives improved sonographically estimated fetal growth, birth weight, percentage of low-birth-weight deliveries, and breastfeeding duration.195,196Medications Nicotine Replacement Therapy (NRT)A variety of formulations of nicotine NRTs are available over the counterincluding the transdermal patch, spray, gum, and lozengesand are equally effective for cessation.37,38,197,198 NRTs stimulate the brain receptors targeted by nicotine, helping relieve nicotine withdrawal symptoms and cravings that lead to relapse.37 Many people use NRT to help them get through the early stages of cessation, and those with more severe nicotine addiction can benefit from longer-term treatment. Use of NRT improves smoking cessation outcomes, and adding behavioral therapies further increases quit rates.198 A combination of continual nicotine delivery through the transdermal patch and one other form of nicotine taken as needed (e.g., lozenge, gum, nasal spray, inhaler) has been found to be more effective at relieving withdrawal symptoms and cravings than a single type of NRT.37,167,198 Researchers estimate that NRT increases quit rates by 50 to 70 percent.37 Using the patch for up to 24 weeks has been shown to be safe.39BupropionBupropion (immediate-release and extended-release) was originally approved as an antidepressant. It works by inhibiting the reuptake of the brain chemicals norepinephrine and dopamine as well as stimulating their release. Bupropion has been found to increase quit rates compared with placebo in both short- and long-term follow-up studies166,198,199 and is indicated for smoking cessation. It is equally effective to NRT.167VareniclineVarenicline helps reduce nicotine cravings by stimulating the alpha-4 beta-2 nicotinic receptor but to a lesser degree than nicotine. Varenicline boosts the odds of successfully quitting, compared with unassisted attempts.198 Varenicline increased the likelihood of quitting compared with placebo, and some studies find that it is more effective than single forms of NRT200,201 and bupropion.167 In a primary care setting, 44 percent of patients on varenicline, either alone or combined with counseling, were abstinent at the 2-year follow-up. Patients who participated in group therapy and adhered to the medication were more likely to remain abstinent.202 Research also suggests that this medication may be more effective than bupropion.199Medication combinationsSome studies suggest that combining NRT with other medications may facilitate cessation. For example, a meta-analysis found that a combination of varenicline and NRT (especially, providing a nicotine patch prior to cessation) was more effective than varenicline alone.203 Similarly, adding bupropion to NRT also improved cessation rates.199 For smokers who could not cut down significantly by using the NRT patch, combining extended-release bupropion and varenicline was more effective than placebo, particularly for men and those who were severely nicotine dependent.139Other antidepressantsIn addition to bupropion, some other antidepressant medications have also been found effective for smoking cessation, independent of their antidepressant effects, and are considered second-line treatments. A few small studies suggest that nortriptyline is equally effective as NRT.167,199 Although nortriptyline may have side effects in some patients, the small studies for its use in smoking cessation have not reported any.199 Researchers have not observed any impact of selective serotonin reuptake inhibitors (SSRIs) (e.g., fluoxetine, paroxetine, and sertraline) on smoking, either alone or in combination with NRT.199Precision MedicineResearchers have been examining ways to personalize treatment based on important individual biological differences, including genetic differences. The field of pharmacogenetics examines how genes influence therapeutic response to medications, providing critical information to help tailor pharmacotherapies to the individual for maximum benefit. For example, people metabolize nicotine at different rates because of variations in several genes. Individuals who metabolize nicot

Poultry respiratory diseases. Poultry respiratory system. Treatment of chronic respiratory disease in poultry.

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