HELPING TO END ADDICTION LONG-TERM® INITIATIVE: ACCOMPLISHMENTS

2018 – 2026

About the NIH HEAL Initiative

Launched in 2018, the National Institutes of Health (NIH) Helping to End Addiction Long-term® Initiative, or NIH HEAL Initiative®, is an NIH-wide effort to accelerate scientific solutions to the overdose epidemic—including opioid and stimulant use disorders—and the challenges of chronic pain. The initiative is jointly led by the National Institute on Drug Abuse (NIDA) and the National Institute of Neurological Disorders and Stroke (NINDS).

Now in its ninth year of funding, HEAL continues to improve the lives of people and communities affected by substance use, overdose, and pain. HEAL-supported research has resulted in more than 80 U.S. Food and Drug Administration (FDA) investigational new drug and device designations, representing promising new treatments for opioid use disorder and for drug overdoses as well as pain therapeutics. HEAL research has also advanced clinical care across a variety of settings and within specific populations that are uniquely impacted by opioid use disorder and other substance use disorders as well as for people suffering from chronic pain.

Building on this progress, HEAL research continues to evolve to address urgent unmet needs while remaining committed to training the next generation of addiction and pain researchers to sustain this scientific progress for years to come.

Key HEAL Achievements

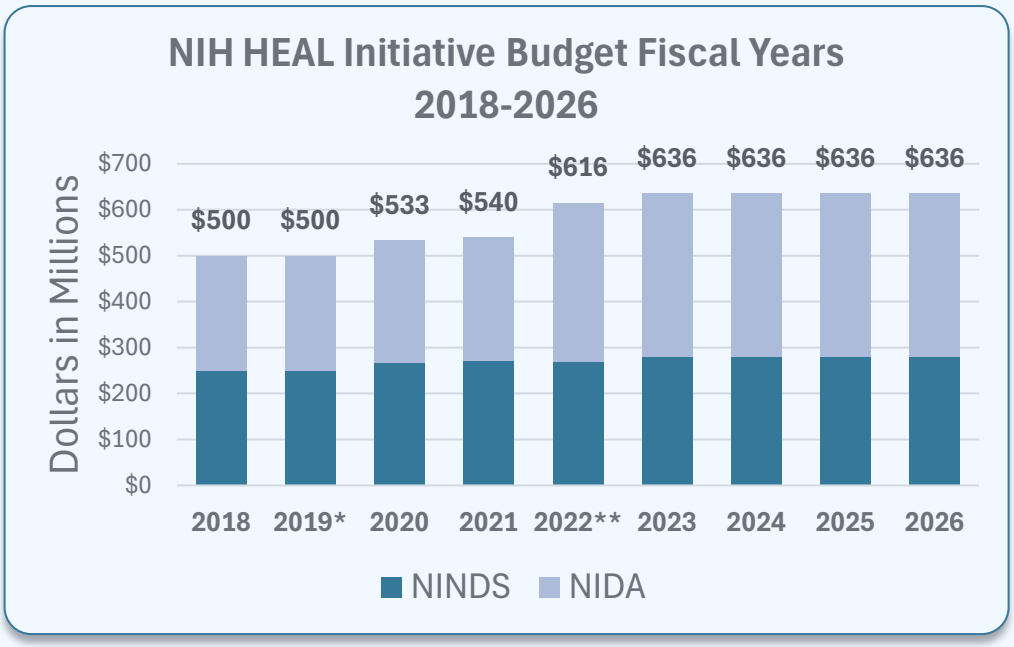
- **Accelerating overdose-reversal and SUD therapeutic development**: Launched Phase II clinical trials of monoclonal antibodies and antidote drugs which prevent fentanyl or methamphetamine from entering the brain while helping the body clear the drugs more quickly. Supported development of Naloxometer, an advanced pacemaker-like device technology to automatically detect and treat overdose by delivering naloxone. Launched clinical trials to test the efficacy of GLP-1 receptor agonist medications for reducing drug cravings and fostering remission in opioid and stimulant use disorders patients.
- **Developing and optimizing non-addictive therapies to treat pain:** Supported pre-New Drug Application (NDA) FDA submission activities for dual-NMR agonist cebranopadol as a low abuse potential treatment for moderate-to-severe acute pain. Completed a Phase II clinical trial for the wearable pain assessment system KnowPain and two Phase I clinical trials to treat chronic pain: STC-004, a selective NaV1.8 inhibitor, and 4ET1103, an oral MNK inhibitor.. Identified and validated MMP-9 as a viable therapeutic target for nerve damage, by targeting monoclonal antibodies to relieve diabetic neuropathic pain. Began early clinical testing for SP-16, an anti-inflammatory peptide intended to prevent painful nerve damage caused by chemotherapy-induced peripheral neuropathy (CIPN).

- **Expanding evidence-based practice research in different healthcare settings**: Developed distinct models to treat opioid use disorder (OUD) in emergency room, primary care, infectious disease clinics, and in pharmacies as well as innovative models to improve OUD treatment engagement. Advanced tools to support researchers, health systems, and policymakers in accelerating adoption of evidence-based practices to treat pain and OUD.
- **Translating Discoveries into Effective Devices to Treat Pain:** Reported the first clinical results for HD64, a spinal implant that senses and reduces pain signals, delivering relief with twice the accuracy of traditional devices. Demonstrated first-in-human prediction of chronic-pain state from intracranial anterior-cingulate and orbitofrontal signals in four participants, establishing personalized neural biomarkers that can guide adaptive deep-brain stimulation.
- **Increasing and optimizing treatments in justice settings:** Demonstrated that implementing the use of medications for opioid use disorder (MOUD) in jails and prisons prior to the release of incarcerated individuals with OUD increased their retention in treatment post release. Established that peer navigation specifically reduces post-release substance and opioid use in women to prevent relapse and overdose.
- **Reducing pain and opioid use:** Supported a behavioral (pain coping skills) intervention that reduced the impact of pain on daily life for people with end-stage kidney disease receiving long-term dialysis. Showed personalized pain management following C-section surgery reduced opioid prescribing while maintaining effective pain relief. Demonstrated high-frequency vibratory mechanical stimulation treatment reduced opioid prescribing and opioid doses compared with transcutaneous electrical nerve stimulation (TENS) for low back pain.
- **Advancing the science of substance use recovery**: Launched network to build the infrastructure for conducting rigorous research on evaluating recovery support services, including youth programs, recovery housing, and recovery community centers, to better understand what works.
- **Developing novel chemistry, biomarkers, and testing methodologies to treat pain and substance use disorder:** Created a comprehensive, annotated HEAL library of compounds, including drugs, probes, and tools for addiction and pain-relevant targets. Nearly 3,000 small molecules associated with approximately 60 known and hypothesized targets have been assembled, curated, and annotated for developing novel treatments for both addiction and pain.
- **Leveraging large datasets for therapeutic advancement:** Through large data generating and sharing consortia like PRECISION and REJOIN, investigators established common data elements (CDEs), harmonized workflows, and generated large, publicly available datasets. 19 datasets are currently available on the SPARC platform for broader use.
- **Advancing care for neonatal opioid withdrawal:** Showed that the Eat, Sleep, Console (ESC) approach helped newborns with neonatal opioid withdrawal syndrome (NOWS) leave the hospital nearly a week earlier and reduced the need for opioid treatment. Funded the development of a vibrating bassinet pad that uses gentle stimulation called Stochastic Vibrotactile Stimulation (SVS) to reduce irritability in opioid-exposed newborns.

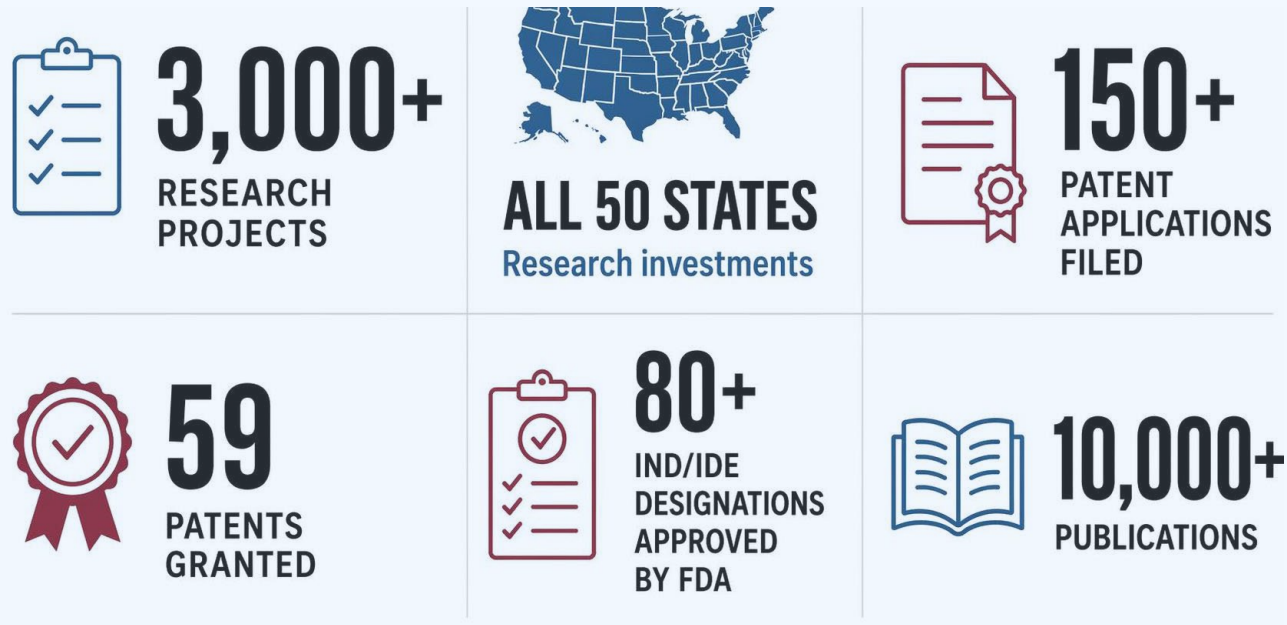
HEAL Program Highlights

- **HEALthy Brain and Child Development (HBCD) Study** – Newest release of study data to the public via the NBDC data hub includes data from over 3,500 participants and is the largest single collection of infant brain magnetic resonance imaging (MRI) and electroencephalogram (EEG) data in the world. The NBCD allows researchers to examine a wide range of questions, including how environments and substances impact infant and child development.
- **Integrative Management of chronic Pain and OUD for Whole Recovery (IMPOWR) Program** – Launching Phase 2 in 2027 and continuing support for real-world, patient-centered research targeting co-occurring chronic pain and harmful opioid use.
- **Pragmatic and Implementation Studies for the Management of Pain to Reduce Opioid Prescribing (PRISM)** – Published primary outcome results from three clinical trials demonstrating that non-opioid therapies are effective and practical to integrate into primary care and physical therapy, including acupuncture for older adults with chronic low back pain, mindfulness-based group medical visits for adults with chronic low back pain, and wearable nerve stimulation for adults with fibromyalgia.
- **Back Pain Consortium (BACPAC) Research Program** – Investigators have built one of the largest, deeply phenotyped, chronic low back pain cohorts with unique datasets designed to enhance understanding of the various factors influencing the experience of chronic low back pain. Investigators designed and completed the Biomarkers for Evaluating Spine Treatments (BEST) clinical trial to enable therapeutic discoveries for the treatment of chronic low back pain. They have published the baseline characteristics of BEST participants and will soon publish findings related to the primary outcome.
- **HEAL Prevention Cooperative (HPC)** – Completed randomized clinical trials evaluating virtual and combined school- and family-based prevention programs that halted expected escalations in substance use in at-risk youth.
- **Pain Management Effectiveness Research Network (ERN)** – Completed five multisite, randomized comparative effectiveness trials addressing a variety of pain conditions in real-world settings, one of which demonstrated that remote cognitive behavioral therapy can reduce high impact chronic pain to expand treatment for rural and underserved areas.
- **Justice Community Overdose Innovation Network (JCOIN)** – Launched Phase 2 in 2024, focused on the prevention and treatment of OUD among high-risk justice-involved populations. JCOIN recently published on scalable, real-world model for improving care cascade outcomes in justice settings nationally.
- **HEAL Data Ecosystem (HDE)** – A growing collection of 166 OUD and pain research datasets available for reuse, with continuous additions from ongoing studies. The HDE enables investigators to analyze patient data across a variety of studies and validate therapeutic targets, maximizing the impact of HEAL-funded research. The HDE has 500-1200 page views per month and 100-500 distinct users per month.

HEAL by the Numbers



NIH HEAL Initiative® Budget for Fiscal Years 2018 - 2026 (Dollars in Millions) for both NIDA and NINDS. *Congress approved carryover spending of the FY18 allocation into 2019. **The NIDA budget increased from $269.5 million in FY21 to $345.3 million in FY22 to include stimulant use.



Future Outlook

The U.S. opioid overdose epidemic, after reaching a peak of 108,000 annual fatalities in 2022, has sharply subsided, with CDC provisional data of drug overdose deaths showing a 24% annual decline in May 2026 with a reported 65,351 deaths. Despite this encouraging decline, far too many people suffer from and still die of drug overdose, and it remains the leading cause of death for Americans ages 18-24. Chronic pain continues to burden more than 50 million Americans and is on the rise, affecting nearly 1 in 4 adults in the U.S. in 2023 – up from 1 in 5 adults in 2019. Continued investment in the NIH HEAL Initiative® will maintain progress toward improving the lives of people affected by overdose, substance use, and pain.