

Appendix C

NIH Institute, Center and Office Efforts in the Pain and Opioid Related Research Areas (submitted by the NIH Institutes, Centers and Offices)

Trans-HHS partnerships

Numerous federal agencies are engaged in activities aimed at addressing the opioid crisis, and the scope of these activities have the potential for overlapping efforts. Cooperative efforts span across agencies to take advantage of opportunities to merge shared interests. The combined expertise that each partner brings to the table helps to ensure greater impact when addressing the complexities surrounding the epidemic. In 2017, HHS launched a [5-point Opioid Strategy](#) aimed at empowering local communities on the frontlines, which uses science as a foundation. To help reach these priorities, NIH partners with a variety of agencies. Several examples are listed below:

- **HHS Opioids Web Page and Code-a-thon**

Teams from National Library of Medicine and the National Institute of Diabetes, Digestive, and Kidney Disease (NIDDK) participated in the [HHS Opioid Code-a-Thon](#) in December 2017. The purpose of the Code-a-Thon was to develop data-driven solutions to combat the opioid epidemic and was attended by more than 50 teams comprised of 300 computer programmers, public health experts, data scientists, researchers, and innovators. Findings from the Code-a-Thon addressed issues such as access to effective treatment and recovery services, identification of at-risk populations and their underlying risk characteristics of opioid misuse or abuse, and prediction and analysis of the supply and movement of legal and illicit opioids.

- **Value Set Authority Center (VSAC)**

In collaboration with Center for Medicare and Medicaid Services, the National Library of Medicine has augmented its Value Set Authority Center. NLM's VSAC allows users to create value sets used for retrieving specified information from electronic health records using standard clinical terminology (e.g., SNOMED, RxNorm). Each value set consists of the numerical values (codes) and human-readable names (terms), drawn from standard vocabularies such as SNOMED, RxNorm, LOINC and ICD-10-CM, which are used to define clinical concepts used in clinical quality measures (e.g., patients with diabetes, clinical visit). This was initially developed to support the reporting of clinical quality measures for electronic health records as part of the CMS meaningful use initiative, however VSAC can be used to create value sets for other purposes (e.g. SAMHSA has developed value sets related to substance abuse and mental health). VSAC currently contains 63 value sets related to "opioids," including value sets for medications containing opioids and conditions associated with opioids. These value sets make it possible for users of electronic health records to more easily identify, for example, patients who have been prescribed opioid products and/or with those treated for opioid-related conditions.

- **Contributions to PCOR-TF (Patient-Centered Outcomes Research Trust Fund) projects related to Opioids**

The National Library of Medicine collaborated with the National Center for Health Statistics on "Modernizing the Infrastructure for Capturing Drug Death Data and Enhancing Research on Opioid Poisoning using Death Certificates' Literal Text Fields. Agreement between NLM and NCHS for 3 tasks: 1) Advising NCHS on strategies to extract, categorize and map drug-related strings terms and phrases from death certificate records' literal text to classification systems used by researchers, 2) Establishing mappings between information technology systems that assure classification standards

are used with respect to clinical terminologies, 3) Developing natural language processing (NLP) programs that reduce manual processes in classifying new drug terms identified on death certificates.

- **United States Preventative Services Task Force**

The Office of Disease Prevention tracks the NIH response to evidence gaps identified by authoritative committees, such as the US Preventive Services Task Force (USPSTF) and others. Two USPSTF [insufficient evidence statements](#) most relevant to the opioid epidemic include: 1) Drug Use, Illicit: Primary Care Interventions for Children and Adolescents and, 2) Drug Use, Illicit: Screening

- **Data Science and Ontology Efforts**

Institutes, Centers, and Offices across the NIH explored activities aimed at improving our understanding of the crisis by supporting more timely, specific public health data and reporting.

- **Analysis of Opioid Use from Medicare data**

- NLM staff calculated frequencies of prescriptions of AD opioids, all opioids and all drugs using its Medicare dataset, which contains information on 1 billion prescriptions from 2006-2014 for 4.8 million beneficiaries. Analysis of a 10% random cohort demonstrated a steady increase from 20 to 30 prescriptions of opioids for 1000 prescriptions between 2006 and 2012, and about 5% AD opioids among all opioids prescribed. Oxycontin is the most prevalent (counted after AD reformulation in 2010).

- **AlcoholMeasuresTM**

- The National Institute of Alcohol Abuse and Alcoholism (NIAAA) funds a Center which houses database of alcohol and other drug measures: (<https://alcoholmeasures.com/#/about>).

- **Prescription Drug Monitoring**

David Herzberg's Scholarly Works Grant focuses on prescription drug abuse in the U.S.

https://projectreporter.nih.gov/project_info_results.cfm?aid=9350400&icde=0 and a blog posting called "Setting today's Opioid Epidemic in Historical Context"

<http://www.processhistory.org/herzberg-opioid-addiction/>

- **Pediatrics and Maternal Health**

NICHD: Behavioral and social sciences grant that is conducted among women with OUD: Determinants of Breastfeeding Intention, Initiation and Continuation among Women Receiving Medication-Assisted Treatment for Opioid Use Disorder, PI Vanessa Short; NICHD/DER/PGNB

ECHO: The ECHO cohorts consist of more than 50 existing cohorts, which in total encompass approximately 45,000 participants (mostly children). Researchers are beginning to examine the existing ECHO data to learn about opioid exposure and related. The Advancing Clinical Trials in Neonatal Opioid Withdrawal Syndrome (ACT NOW) Current Experience Study---The IDeA states Pediatric Clinical Trials Network (ISPCTN), a part of ECHO, is currently collecting data from its member hospitals, as well as a few National Institute on Child Health Development (NICHD) Neonatal Research Network hospitals, on the care of infants with NOWS. There are some maternal variables, so it is possible that some resulting research may be in the behavioral and social science areas.

- **Prevention**

- [Understanding and Advancing NIH-Funded Prevention Research in Humans: The Case of Substance Use Prevention](#). Presentation of the characterization of alcohol tobacco and other substance use prevention in the NIH portfolio that was presented during the annual meeting of the Society for Prevention Research this past spring
- Office of Disease Prevention Director, David Murray, PhD was involved with a session on study design related to [NIDA's HEALing Communities initiative](#) in June 2018.
- **HIV Prevention Trials Network (HPTN)**
The National Institute of Allergy and Infectious Diseases supports the HPTN, which develops and tests the safety and efficacy of primarily non-vaccine interventions designed to prevent the transmission of HIV. HPTN studies strive to prevent HIV infection through the use of antiretroviral drugs, interventions for substance abuse, behavioral risk reduction, and structural interventions.
- **Collaborative Research on Addiction (CRAN)**
The mission of the National Institutes of Health (NIH) partnership, [Collaborative Research on Addiction at NIH \(CRAN\)](#), is to provide a strong collaborative framework to enable the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the National Institute on Drug Abuse (NIDA), and the National Cancer Institute (NCI) to integrate resources and expertise to advance substance use, abuse, and addiction research and public health outcomes.
- **Pain Management**
 - **NICHD:** For opioid/pain portfolio, at this time (2019), 30 distinct opioid/pain projects that included BSS perspective/approach. This inclusion approach views BSS considerations as being integrated into opioid/pain research.
 - **NINR Centers**
NINR supports several center grant awards that are focused on pain, for example, the [OASIS Center](#) at UMB works on phenotyping individuals with chronic pain to “advance our understanding of how individual differences influence resilience, motivation, and capability to engage in self-management interventions, acknowledging that other factors such as psychosocial, environmental, and sex differences may moderate or mediate these relationships”. The [Center for Accelerating Precision Pain Self-Management](#) (CAPPS-M) is “to advance theory-based symptom SM interventions, with a focus on pain, and improve pain self-management and health outcomes in diverse populations with acute and chronic pain.”
 - **Pathways to Prevention (P2P)**
The Office of Disease Prevention, National Institute on Drug Abuse, National Institute of Neurological Disorders and Stroke, and the NIH Pain Consortium co-sponsored the P2P workshop [The Role of Opioids in the Treatment of Chronic Pain](#) . The workshop sought to clarify long-term effectiveness of opioids for treating chronic pain, potential risks of opioid treatment in various patient populations, effects of different opioid management strategies on outcomes related to addiction, abuse, misuse, pain, and quality of life, effectiveness of risk mitigation strategies for opioid treatment, and future research needs and priorities to improve the treatment of pain with opioids.
 - **NIH-VA-DoD Pain Management Collaboratory**
The NIH partnered with the Department of Defense and Veterans Affairs Administration to establish the NIH-DoD-VA Pain Management Collaboratory. This multi-component research program focusing on nonpharmacologic approaches to pain management has awarded 12 cooperative agreements totaling \$81 million over six years. Studies found that nearly 45 percent of soldiers and 50 percent of veterans experience pain on a regular basis, and there is

significant overlap among chronic pain, PTSD, and persistent post concussive symptoms. To address these needs, 12 new awards were released in 2017 and 2018 with a focus on nonpharmacologic approaches to pain and related conditions as treated within the health care systems serving active duty military and/or veterans. Lessons learned will provide important evidence-based approaches to treating pain without prescription opioids, which can be disseminated and translated across to other populations and into the private sector.