TBM

COMMENTARY/POSITION PAPER

Addressing the opioid crisis: social and behavioral research contributions at the National Institutes of Health

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Cite this as: *TBM* 2020;10:482–485
doi: 10.1093/tbm/ibz038

Abstract

This commentary highlights current NIH efforts aimed at addressing the opioid crisis, specifically activities related to behavioral and social science research. Implications for this commentary will inform researchers, practitioners, and policymakers on current endeavors and future funding opportunities.

Keywords

mHealth, Opioids, Opioid use disorder, Opioid overdose, Pain, Chronic pain, Substance abuse

INTRODUCTION

On October 26, 2017, the U.S. Department of Health and Human Services (HHS) declared the opioid crisis a public health emergency [1] and soon after announced the 5-Point Strategy to End the Opioid Crisis [2]. The National Institutes of Health (NIH), a component of HHS, mounted efforts to advance scientific breakthroughs aimed discovering new and better ways to prevent opioid misuse, treat opioid use disorders, and manage pain [3]. A major coordinated effort through the NIH Office of the Director, the Helping to End Addiction Long-Term (HEAL) Initiative, was launched in April 2018. This trans-agency effort builds on well-established NIH research to speed scientific solutions to stem the national opioid public health crisis [4]. In addition to HEAL Initiative efforts, individual NIH institutes, centers and offices have also taken action through collaborative activities and innovative funding opportunities. This Commentary will take a closer look at the NIH efforts related to opioid misuse and pain that have behavioral and social sciences research components.

BACKGROUND

According to the National Institute on Drug Abuse, drug overdoses killed more than 72,000 people in 2017, of which 49,000 deaths involved a prescription or illicit opioid [5]. The severity of the opioid crisis is often reported in drug overdose deaths; however, the number of overdoses does not convey the full scope of tragedy. This crisis reaches across practically every domain of family and community life, from lost productivity and economic opportunity to inter-generational and childhood trauma, to extreme strain on community resources, including first responders, emergency rooms, hospitals, and treatment centers [6]. Rising from two sizable public health challenges, namely the suffering of tens of millions of people living with chronic pain and the widespread diversion and misuse of prescribed opioid medications [7], this epidemic is worsened by poor implementation of evidence-based strategies to better treat addiction and to improve management of chronic pain. A public health approach to improving pain care is needed to address the biopsychosocial nature of pain through integrated care that reduces reliance on opioids. Such an approach would recognize the variability in individual experience and burden of pain that often requires an interdisciplinary, biosocial perspective approach; social and behavioral determinants that contribute to risk of both opioid misuse and for developing chronic pain are often overlooked [8].

HEAL INITIATIVE

To speed scientific solutions to curb the national opioid crisis, Congress added $500 million to the base appropriation of the NIH starting in fiscal year 2018 [9], which nearly doubled support for research on opioid use disorder and pain from approximately $600 million in fiscal year 2016 to $1.1 billion in fiscal year 2018 [10] through the HEAL Initiative [11]. This increase will help bolster research aimed at improving treatments for opioid misuse and addiction and enhancing pain management, including research to integrate behavioral interventions with medication-assisted treatment (MAT) and implementation science to develop and test treatment models [12]. This "all hands on deck" approach provides numerous research opportunities to expedite effective strategies for opioid misuse and addiction, and accelerate development and evaluation of pharmacological and nonpharmacological interventions for pain management.

As part of a government-wide effort to address the opioid crisis and the public health challenge of chronic pain, the NIH initiated a series of cutting-edge science meetings to build the inventory of top

priorities for HEAL research [13]. The initial set of meetings produced recommendations for advancing the addiction and pain research agenda and focused on accelerating development of safe and effective interventions for pain, addiction, and overdose. To enhance these efforts, the Office of Behavioral and Social Sciences Research (OBSSR), in collaboration with the National Institute on Drug Abuse (NIDA), the National Institute of Neurological Disorders and Stroke (NINDS), the National Center for Complementary and Integrative Health (NCCIH) and the National Institute on Minority Health and Health Disparities (NIMHD) hosted a meeting highlighting behavioral and social science strategies and interventions for the prevention and treatment of opioid use disorder and for pain management. The meeting, *Contributions of Social and Behavioral Research in Addressing the Opioid Crisis (CSBR-AOC),* was held on March 5–6, 2018. A diverse panel of researchers, academics, clinicians, patients, and advocacy groups presented and discussed the most recent and relevant behavioral and social scientific data and identified the greatest needs and areas of opportunity related to the current crises. Their input helped contribute to the major research priorities within the NIH HEAL Initiative (see report for presentations and specific citation contact information). According to the panel [14,15], key issues, actionable social and behavioral science priorities and recommendations that have the potential to improve the response to the opioid crisis and alleviate the burden of pain include:

- Social factors: Vulnerability to addiction and responsiveness to treatment vary widely among individuals and these individual variations are influenced by social factors. Research should assess how social structures differ among racial and ethnic groups with different substance-related mortality rates. A more nuanced discussion of race is necessary to understand how the effects of institutionalized racism are influencing the crisis. Cultural narratives around the determinants of substance use and misuse differ widely among communities and geographical regions, particularly as the opioid epidemic has drastically affected some of poorest regions of the country. The CDC considers individuals with low-income to be at high risk for prescription drug overdose, which is precipitated by access and quality of health care received by people in these economically disadvantaged areas.
- System-level changes: A coordinated approach to addiction treatment should include intervention, stigma reduction, and recovery programs that are not solely focused on reducing mortality. These approaches include public health campaigns that promote resilience to addiction and increased social cohesion. Many communities lack the necessary infrastructure to address the effects of the opioid crisis and police often are the only available crisis support. Infrastructure improvements should be studied to develop a process to help the most vulnerable recover from trauma, unemployment, and consequences of drug-related nonviolent felonies.
- Stigma: Stigma associated with drug use and recovery has significant effects at the community level. Therefore, it is important to understand what motivates people to adhere to treatment and how to address these factors within the community.
- Dissemination and implementation barriers: Primary care providers are often those that provide for the first line of care for pain management and for opioid use disorder. They are limited by time and a perspective that emphasizes biomedical factors rather than psychosocial factors. This leads to a mismatch between the clinical approach and the best practices for the patients. Implementation of evidence-based interventions is a critical consideration given the number of strategies known to be effective but are challenging to integrate within the existing health system. Nondrug modalities, including behavioral therapies and mind/body techniques such as mindfulness meditation, are proven to help individuals control and manage pain. However, these therapies are underutilized. Nonpharmacologic strategies often are cost-effective and prove effective for addiction when used in conjunction with medication-assisted therapy but implementation and better payment models must be developed to increase adoption of these strategies.
- Prescribing behaviors: Provider prescribing behaviors often are based in tradition and health care systems' limitations. Both clinician prescribing behavior and patient expectation of the risks and benefits associated with receiving an opioid prescription must be changed. In some health care provider cultures, not prescribing opioids is considered poor practice and providers often are not trained in techniques such as motivational interviewing. Many opioids are initiated in the hospital setting, but individual prescribing patterns vary widely and may be influenced by the local culture among providers.
- Precision medicine: An important aspect of improving clinical decision-making (which includes inappropriate and ineffective prescribing) is developing evidence to predict individual variability in the patient's entire biopsychosocial experience of pain and analgesic response. If a patient's heritable susceptibility to addiction could be identified before prescribing opioids, then alternative pain management approaches could be chosen. Mapping social-structural dynamics can help to align the environment and care with the practical experiences of people who use drugs. Peer engagement in intervention delivery is a particularly untapped resource because people who use drugs seldom are represented around the table when interventions are developed.

OFFICE OF BEHAVIORAL AND SOCIAL SCIENCES RESEARCH

In a follow-up to the HEAL meeting on social and behavioral research, OBSSR developed a trans-NIH *Contributions of Social and Behavioral Research in Addressing*

*the Opioid Crisis (*CSBR-AOC) Strategic Planning Committee made up of senior-level staff from 23 NIH institutes and centers. This Committee has been charged with integrating appropriate behavioral and social science research priority recommendations from the CSBR-AOC meeting into current and future NIH activities. This includes identification and integration of social and behavioral research questions into relevant NIH funding opportunity announcements focusing on a range of topics to address opioid use disorder and pain. In December 2018, 36 funding opportunity announcements were published and are currently listed on the HEAL website [16] and include small business innovation research awards, cooperative agreements, and exploratory research grants.

TRANS-NIH ACTIVITIES

In addition to the HEAL program and OBSSR-led efforts, there are complementary activities ongoing across the NIH. For example, 25 NIH institutes, centers, and offices actively participate in the NIH Pain Consortium [17]. This group identifies, coordinates, and supports pain research initiatives and activities at NIH and is actively engaged in the NIH HEAL-related opioid and pain research efforts and other pain research activities. At the 2018 NIH Pain Consortium Symposium, *From Science to Society: At the Intersection of Chronic Pain Management and the Opioid Crisis*, the NIH Director, Dr. Francis Collins, engaged in a fireside chat with the U.S. Surgeon General, Jerome Adams [18]. During their discussion, the need for rapid dissemination of proven clinical practices and prevention strategies was emphasized, as well as collaborative care management between acute pain and chronic pain. Vice Admiral Adams acknowledged that current research tends to focus on creating new modalities to treat pain despite the fact that clinicians are not using 90% of the effective modalities currently available, and stigma creates taboos around some forms of therapy (e.g., mindfulness) regardless of the proven benefit and potential to decrease a patients' reliance on opioids. Dr. Collins reported that NIH is engaged in conversations with the Center for Medicaid and Medicare Services to build a stronger evidence base for pain interventions that are not based on a pill but rather built on evidence-based interventions such as acupuncture, cognitive behavioral therapy, and mindfulness [19].

TRANS-UNITED STATES DEPARTMENT ACTIVITIES

In addition to collaborative activities between the institutes, centers, and offices, numerous cooperative efforts span across federal 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. For example, the NIH partnered with the Department of Defense and Department of Veterans Affairs to establish the NIH-DoD-VA Pain Management Collaboratory. This multicomponent research program has awarded over $81 million to explore nonpharmacologic approaches to pain management [20]. Supported research projects focus on nonpharmacologic approaches to pain and related conditions within the health care systems serving active duty military and/or veterans. Research results include data that nearly half of soldiers and veterans experience pain on a regular basis and that there is significant overlap among chronic pain, post-traumatic stress disorder, and persistent post concussive symptoms [21]. Lessons learnt will provide evidence-based approaches to treating through nonopioid management strategies, which can be disseminated and translated across other populations.

NEXT STEPS

Efforts led and supported by the HEAL Initiative, along with activities within and across individual NIH institutes, centers and offices, reflect an ambitious vision and continued investment to address America's opioid public health emergency. Information release about funding opportunities began in summer 2018, and many included behavioral and social science. For example, through the NIDA Justice Community Opioid Innovation Network (JCOIN), the NIH will establish a network of research investigators to rapidly conduct studies on quality care for opioid misuse and opioid use disorder in justice populations by facilitating partnerships between local and state justice systems and community-based treatment providers [RFA-DA-19-023]. Funding opportunities were also available to assess the role of complementary behavioral interventions for primary and secondary prevention of opioid use disorder and to examine if these complementary approaches enhanced adherence to MAT [RFA-AT-19-007]. For a comprehensive list of opportunities, please refer to the NIH HEAL website [22] and NIH guide [23] for current funding announcements. Although it may not appear from all titles that there is relevance to the behavioral and social sciences, there are opportunities for integration of biopsychosocial frameworks and perspectives. There remains much to learn to prevent and treat opioid abuse and better manage both acute and chronic pain, and the NIH continues to support research that address these public health issues.

References

1. U.S. Department of Health and Human Services. Office of the Secretary. Available at https://www.hhs.gov/sites/default/files/opioid%20PHE%20Declaration-no-sig.pdf. Accesibility verified November 15, 2018.
2. U.S. Department of Health and Human Services. 5-Point Strategy to Combat the Opioid Crisis. Available at https://www.hhs.gov/opioids/about-the-epidemic/hhs-response/index.html. Accesibility verified November 15, 2018.

3. National Institute on Drug Abuse. Opioid Overdose Crisis. Available at https://www.drugabuse.gov/drugs-abuse/opioids/opioid-overdose-crisis. Accesibility verified November 15, 2018.
4. National Institutes of Health. Helping to End Addiction Long-Term Initiative. Available at https://www.nih.gov/research-training/medical-research-initiatives/heal-initiative. Accesibility verified November 15, 2018.
5. National Institute on Drug Abuse. Overdose Death Rates. Available at https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates. Accesibility verified November 1, 2018.
6. National Institutes of Health. NIH HEAL Initiative Research Plan. Available at https://www.nih.gov/research-training/medical-research-initiatives/heal-initiative/heal-initiative-research-plan. Accesibility verified August 7, 2018.
7. National Institute on Drug Abuse. Opioid Overdose Crisis. Available at https://www.drugabuse.gov/drugs-abuse/opioids/opioid-overdose-crisis. Accesibility verified October 23, 2018.
8. National Institutes of Health. Contributions of Social and Behavioral Research in Addressing the Opioid Crisis. Full Summary. Available at https://www.nih.gov/heal-initiative/full-summary-contributions-social-behavioral-research-addressing-opioid-crisis. Accesibility verified August 30, 2018.
9. Collins FS, Koroshetz WJ, Volkow ND. Helping to end addiction over the long-term: The research plan for the NIH HEAL initiative. *JAMA*. 2018;320(2):129–130. Available at https://jamanetwork.com/journals/jama/fullarticle/2684941. Accesibility verified November 20, 2018.
10. National Institutes of Health. News Releases. Available at https://www.nih.gov/news-events/news-releases/nih-launches-heal-initiative-doubles-funding-accelerate-scientific-solutions-stem-national-opioid-epidemic. Accesibility verified August 18, 2018.
11. National Institutes of Health. About the NIH HEAL Initiative. Available at https://www.nih.gov/research-training/medical-research-initiatives/heal-initiative. Accesibility verified August 30, 2018.
12. National Institutes of Health. HEAL Initiative. Available at https://www.nih.gov/research-training/medical-research-initiatives/heal-initiative/heal-initiative-research-plan. Accesibility verified December 13, 2018.
13. National Institutes of Health. NIH HEAL Initiative Events. Available at https://www.nih.gov/research-training/medical-research-initiatives/heal-initiative/events. Accesibility verified August 22, 2018.
14. National Institutes of Health. NIH HEAL Initiative. Executive Summary-Contributions of Social and Behavioral Research in Addressing the Opioid Crisis. Available at https://www.nih.gov/heal-initiative/executive-summary-contributions-social-behavioral-research-addressing-opioid-crisis. Accesibility verified August 7, 2018.
15. National Institutes of Health. NIH HEAL Initiative. Panelist List. Available at https://www.nih.gov/research-training/medical-research-initiatives/heal-initiative/participant-list-contributions-social-behavioral-research-addressing-opioid-crisis. Accesibility verified August 15, 2018.
16. National Institutes of Health. NIH HEAL Initiative. Funding Announcements and Opportunities. Available at https://www.nih.gov/research-training/medical-research-initiatives/heal-initiative/funding-announcements-opportunities. Accesibility verified August 30, 2018.
17. National Institutes of Health. Pain Consortium. Available at https://painconsortium.nih.gov/. Accesibility verified November 19, 2018.
18. National Institutes of Health. *13th Annual Pain Consortium Symposium. From Science to Society: At the Intersection of Chronic Pain Management and the Opioid Crisis*. Available at https://painconsortium.nih.gov/Meetings_Events/Annual_Symposium/2018-NIH-Pain-Consortium-Symposium. Accesibility verified August 22, 2018.
19. National Institutes of Health. *13th Annual Pain Consortium Symposium: From Science to Society: At the Intersection of Chronic Pain Management and the Opioid Crisis. (Day 1 videocast)*. Available at https://videocast.nih.gov/summary. Accesibility verified October 23, 2018.
20. Pain Management Collaboratory. NIH-DoD-VA Pain Management Collaboratory. Available at http://painmanagementcollaboratory.org/. Accesibility verified August 28, 2018.
21. National Center for Complementary and Integrative Health. NCCIH Research Blog. Available at https://nccih.nih.gov/research/blog/partnering-on-pain. Accesibility verified November 1, 2018.
22. National Institutes of Health. NIH HEAL Initiative. Funding Opportunities and Announcements. Available at https://www.nih.gov/research-training/medical-research-initiatives/heal-initiative/funding-announcements-opportunities. Accesibility verified August 29, 2018.
23. National Institutes of Health. Office of Extramural Research. NIH Guide to Grants and Contracts. Available at https://grants.nih.gov/funding/searchguide/index.html. Accesibility verified October 23, 2018.