



# Acupuncture: an integrative therapy for pain management and opioid reduction in the United States

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## The loss caused by opioids epidemic in the United States

In the United States, it was estimated that in 2016, about 25 million residents suffered from various chronic pain, while 126 million adults had certain type of pain in the prior three months (1). US Centers for Disease Control and Prevention (CDC) based on National Health Interview Survey (NHIS) Data in the same year and pointed out that there were 50 million (20.4%) adults with chronic pain and about 20 million (8.0%) adults with high-impact chronic pain, especially among women and older adults (2). As a result, 216 to 255 million prescriptions per year were written for opioid medications during 2006 to 2016, which is about 66.5–82.1 prescriptions per 100 residents, while 191 million prescriptions were written (or 58.7 per 100 residents) in 2017 (3). Such over-prescription of opioids also includes some illegal prescriptions by healthcare providers, although the reasons for this and the opioid epidemic have been complicated. For example, federal prosecutors charged 60 doctors, pharmacists, medical professionals and others in connection with alleged opioid pushing and health care fraud (4). An unfortunate consequence of this high use and availability of opioids is a growing number of opioid-related deaths from addiction and overdose. There were 70,237 drug overdose deaths that occurred in the United States in 2017, while opioids—mainly synthetic opioids (other than methadone)—alone caused 47,600 deaths (equal to 130 deaths per day, occupying 67.77% of total overdose deaths). This is a 12.9-fold increase from 2007 to 2017 (5). CDC estimates that the total “economic burden” of prescription opioid misuse alone in the United States is

at least 78 and half billion dollars a year, including the costs of healthcare, lost productivity, addiction treatment, and criminal justice involvement; equal to each United States resident spending \$248.26 per year for this loss (6).

## Reactions of United States government agencies

The opioids epidemic has been so severe, as to a White House panel urged the United States president to declare the opioid crisis a national emergency, and August 31 of each year was designated as “International Overdose Awareness Day” by the CDC (7). To solve the opioid crisis, various federal regulatory and oversight agencies, issued various plans and strategies in solving such epidemic. For example, the United States Food and Drug Administration (FDA) developed a comprehensive action plan to take concrete steps toward reducing the impact of opioid abuse on American families and communities. As part of this plan, the agency is planning to work more closely with its advisory committees before making critical product and labeling decisions; enhancing safety labeling; requiring new data; and seeking to improve treatment of both addiction and pain (8). The National Academies of Sciences, Engineering, and Medicine (NASEM), issued National strategy to reduce the opioid epidemic, an urgent public health priority (9), and the Joint Commission—the accreditation agency for United States healthcare system especially for hospitals—have started to advise or mandate that healthcare systems and providers offer non-pharmacologic treatment options for pain control (10).

As one of non-pharmacological therapies, acupuncture

is the most evidence-based, immediately available choice to fulfill these calls for addiction treatment and pain management. It has been frequently recommended because it has a special role in resolving the opioid epidemic in the United States either by treating the pain and decreasing opioid usage, or by treating opioid addiction itself (11). On June 19, 2018, Rep. Jackie Walorski and Rep. Judy Chu's Opioid Alternative Bill passed unanimously in the United States Congress, in which acupuncture is one of the major alternatives for prescription pain medication. On Oct 24, 2018, President Trump signed the historic Opioid Package H.R.6 Act (Support for Patients and Communities Act, also known as Substance Use—Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act) into law, in which above-mentioned Opioid Alternative Bill was included. Both the House and the Senate overwhelmingly passed this final package which included in acupuncture as one of important integrative methods in pain management and solving opioid epidemic (12). It is very encouraged for United States acupuncture and Chinese medicine professionals— since our American TCM Association (ATCMA) is one of sponsor organizations for Rep. Judy Chu's acupuncture bills.

Since 2018, Veteran Administration started to cover acupuncture for all military veterans and their family members (13), although Tricare for military service members, etc. still does not cover acupuncture until now (14). Following the requirements of H.R.6 law, Medicare planned to implement step-by-step to cover acupuncture for seniors and disabled people. As the first step, for further assessing acupuncture's effect, Medicare together with National Center for Complementary and Integrative Medicine (NCCIH), National Institutes of Health (NIH) initiated a large pragmatic acupuncture trial on chronic low back pain in seniors (15). It is one year and another three years, two steps study. It can be expected that Medicare will have real steps toward cover the acupuncture, and it is important in decreasing the opioids usage in seniors and disabled populations.

### **Update in acupuncture professions**

In 2016, National Cancer Institute (NCI) held a special conference and after that NCI officials and experts published a White Paper on acupuncture for symptom management in oncology which had been collected by Rand as known United States thinking tank for helping address some of the world's most challenging problems, it urges

the transformation of acupuncture research into cancer symptom management (16,17). Currently, acupuncture has been used in most leading United States—based cancer centers as one of the major integrative medicine therapies in cancer care—in treating the various cancer related pains or other symptoms, and decreasing the usage of opioids medications. In 2018, NCI held its second conference on Acupuncture for Symptom Management in Oncology, together with NCCIH. It is clear that NCI and NCCIH have very strong desire in acupuncture development and pushing its applications in main medical stream, encouraging the transforming of acupuncture research results into real clinical practice.

Thirteen organizations and academic institutions in the United States acupuncture professions, Chinese medicine and main stream academic institutions published a White Paper in late 2017, to summarize for academic scholars, healthcare professionals, administrators, policymakers, and the general public the available evidence for acupuncture as a treatment for various pain conditions as well as for opiate addiction. It included evidence on the safety, cost-effectiveness, mechanisms of actions, and provider availability for acupuncture (11). It has been widely spread among Congress members, and various organizations and agencies, as well in academic field, it already got more than 20 citations during one and half year. Kong from society for acupuncture research (SAR) also published article and called for exploring the multiple roles of acupuncture in alleviating the opioid crisis (18). Both articles consider that acupuncture is an effective, safe, and cost-effective treatment for numerous types of acute and chronic pain; it should be listed as a first line treatment for pain before opiates are prescribed, and may reduce opioid usage. Its analgesic mechanisms have been extensively explored and acupuncture can increase the production and release of endogenous opioids in both animals and humans. It is effective for the treatment of various chronic pain conditions involving maladaptive neuroplasticity. Acupuncture is a very promising, already applied adjunctive therapy in opiate addiction and rehabilitation. As most commonly recommended, non-pharmacological management options for pain relief, evidence supports acupuncture is the most specific and effective for opioid abuse and overuse. Acupuncture is widely available from qualified practitioners nationally; there are more than 37,000 licensed acupuncturists and over 10,000 medical acupuncturists in the United States in 2018 (11,19).

ATCMA has been formed by acupuncture and Chinese

medicine providers graduated from Universities or Colleges of Chinese Medicine. Its members have actively involved in acupuncture research and advocate in the UNITED STATES (11,16,19). Recently ATCMA members followed Medicare and NCCIH research guideline and involved in clinical study on real-world acupuncture treatments for chronic low back pain in older adults (20). They further collaborated with members of SAR, formed a research team, and submitted research proposal to NCCIH in March 2019. In this big project, current author (Arthur Yin Fan) has served as one of three research consultants. No matter whether get the grant or not, ATCMA and its members will continue working on promote acupuncture, as one form of integrative non-pharmacological therapies in treating the pain, decreasing opioids usage and solving opioids epidemic.

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### Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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