

3 April 2024

State Health Plan Board of Trustees
North Carolina State Health Plan
3200 Atlantic Ave
Raleigh, NC 27604

Re: Acupuncture and the Treatment of Chronic Pain and Opioid Addiction

Dear Chairman Folwell and the Board of Trustees:

North Carolina's Governorⁱ, Attorney Generalⁱⁱ and Department of Health and Human Servicesⁱⁱⁱ and the State Health Plan Board of Trustees^{iv} are all actively combating North Carolina's opioid crisis. It is difficult to find a community anywhere in North Carolina that is not adversely affected by this crisis.

Recognizing your role overseeing the North Carolina State Health Plan for Teacher and State Employees, the NCALB commissioned the enclosed report to summarize and raise your awareness of studies and research demonstrating Acupuncture's efficacy (in terms of both success rate and cost) in treating opioid addiction and, perhaps more importantly, its root cause: acute and chronic pain.

We would be interested in learning what additional information may aid your assessment regarding whether Acupuncture should be among the treatments available to participants in the State Health Plan to combat opioid addiction and chronic pain in order to promote the health, safety, and welfare of the people of North Carolina.

Dr. Lissa Juedemann, chair of the NCALB, has volunteered her time for North Carolina and the profession for 5 years. During this time, she has made great strides ensuring that the health, safety, and welfare of the citizens of North Carolina are protected through the licensing supervision of acupuncturists.

Dr. Majebe has been practicing acupuncture for 40 years and was appointed to the very first Acupuncture Licensing Board in 1993. Since that time, she has been a pivotal figure in the North Carolina Acupuncture community.

We appreciate your time and consideration and hope to have the chance to discuss this further.

Post Office Box 10686
Raleigh NC 27605
919.821.3008
Fax 919.833.5743

Combating the Opioid Crisis:

Acupuncture and the Treatment of Chronic Pain and Opioid Addiction

Authors: Mary Cissy Majebe, OMD, L.Ac.; Michael J. Tadych, J.D.; Aidan Keeva, DACM; and Dolph Todd, DACM

Overview

The national opioid crisis is the most daunting and complex public health challenge of our time (U.S. Department of Health and Human Services, 2019). Every day, more than 130 people in the United States die after overdosing on opioids (CDC/NCHS, 2018). The impacts of the COVID-19 pandemic have only exacerbated this crisis. Opioid involved overdose deaths rose from 68,630 reported in 2020 to 80,411 reported in 2021. The Centers for Disease Control and Prevention estimates that the total "economic burden" of opioid use disorder and fatal opioid overdose was estimated to be \$1.02 trillion in 2017, with a majority of the costs attributed to reduced quality of life from opioid use disorder and the value of life lost due to fatal opioid overdose. (Centers for Disease Control and Prevention, Office of Policy, Performance, and Evaluation).

In North Carolina, more than 12,000 residents died from opioid-related overdoses between 1999 and 2016 (2019 Opioid Summit, n.d.), with 1,884 more unintentional opioid overdose deaths in 2017 alone. Opioid overdoses create a massive burden for emergency departments in North Carolina, with 7,455 Opioid Overdose visits in 2017. NCDHHS reported that in 2020 an average of nine North Carolinians died each day from an overdose, a 40 percent increase from the previous year.

At its root, the opioid crisis is the result of our medical system's inability to properly support patients who suffer from chronic pain, leading to the over-prescription of extremely addictive pharmaceuticals. Studies have found that roughly 21 to 29 percent of patients prescribed opioids for chronic pain misuse them, with 8 to 12 percent of these developing an opioid use disorder. An

estimated 4 to 6 percent of these patients transition to heroin (Vowles K.E., et. al., 2015).

One of the NIH's main efforts to combat the opioid crisis has focused on advancing better practices for pain management, which has led to an increase in interest in Acupuncture. In 2016, Congress passed the Comprehensive Addiction and Recovery Act, which mandates that Complementary and Integrative health therapies such as Acupuncture be provided in Veteran Administration hospitals. This provides non-pharmacological options for addressing pain and its related health conditions (VA Office of Research & Development, n.d.).

Acupuncture in North Carolina

In 1993, the North Carolina Legislature established Acupuncture Licensing. The purpose of Article 30 was "to promote the health, safety, and welfare of the people of North Carolina by establishing an orderly system of Acupuncture licensing and to provide a valid, effective means of establishing licensing requirements." Today, there are more than 725 licensed acupuncturists practicing in North Carolina.

North Carolina has two Acupuncture Colleges, both of which are accredited by the Accreditation Commission for Acupuncture and Herbal Medicine, the national accreditation agency approved by the United States Department of Education. One of these is also Licensed by the North Carolina Board of Governors to convey a Masters' Degree and a Doctorate Degree. Both Acupuncture colleges in North Carolina conduct four-year educational programs.

Chinese medical education focuses not only on Chinese medicine and Acupuncture, but these

programs have extensive coursework in Biomedical classes such as Physiology, Pathology, Laboratory Analysis and Pharmacology. Acupuncture students are also trained in safe needling practices and are certified in Clean Needle Technique.

To graduate from an Acupuncture Educational program, students must also complete between 600 and 1000 hours of Clinical Training where they are directly supervised by a Licensed Acupuncturist. After completing four intensive years of training, these students prepare to take their National Board Examinations from the National Commission for the Certification of Acupuncture and Oriental Medicine. All Licensed Acupuncturists in North Carolina take examinations in Acupuncture, Chinese Medicine Theory and Biomedicine. The profession is highly regulated, ensuring that only those who are well-trained in safe and effective techniques are allowed to practice.

North Carolina State Health Plan for Teachers and State Employees

The benefits of expanding insurance plans in North Carolina to include Acupuncture coverage are numerous. Acupuncture is a cost-effective, non-pharmacologic treatment for both acute and chronic pain, and thus has an important role to play in combating the national opioid crisis. In addition, Acupuncture has been found to be effective for a wide-range of other conditions, including migraines, allergic rhinitis, and chemotherapy-induced nausea and vomiting. (McDonald, J., & Janz, S., 2017, p. ii). Multiple studies have established Acupuncture as a cost-effective treatment, especially for pain, indicating that including Acupuncture coverage is in the financial best interest of insurance providers and the public.

Research on Acupuncture Efficacy

Evidence of effectiveness underpins the validity of all health care interventions. Acupuncture has been practiced for thousands of years; however, research into its clinical effectiveness and cost effectiveness using modern measurement standards such as controlled clinical trials and meta-analysis is

relatively new. In 1996, the World Health Organization (WHO) began an initiative to review Acupuncture, focusing on the numerous controlled clinical trials that were available. The result was a review of clinical trials through 1999, which culminated in 'Acupuncture: A Review and Analysis of controlled clinical trials' published by WHO in 2002 (WHO, 2002.) The report identified 28 conditions for which Acupuncture was found to be effective and nearly 100 others where there was a therapeutic effect.

More recently, the Acupuncture Evidence Project, a comprehensive literature review conducted in Australia in 2017 found considerable evidence for the use of Acupuncture to treat a wide range of conditions (McDonald, J., & Janz, S., 2017). With a focus on systematic reviews and meta-analyses, the study found evidence for the effectiveness of Acupuncture for 117 conditions, with stronger evidence for effectiveness of some conditions more than others (p. ii). Of these, the study concluded that strong evidence supported the effectiveness of Acupuncture for eight conditions (migraine, prophylaxis, headache, chronic low back pain, allergic rhinitis, knee osteoarthritis, chemotherapy-induced nausea and vomiting, post-operative nausea and vomiting and post-operative pain).

Multiple studies have focused solely on Acupuncture's ability to treat pain, assessing its potential role in combating the opioid crisis. For example, in 2017 researchers at a number of scientific institutions in the United States and South Korea found that electroacupuncture, a modern development of Acupuncture, can ease pain and promote tissue repair in humans, horses, and rodents, through the Nervous System-Dependent Release of Mesenchymal Stem Cells. (Salazar, T., et. al., 2017).

Research has also identified that Acupuncture has an impact on Mu opioid receptors (Fleckenstein, J., et. al., 2009), supporting the efficacy of Acupuncture for management of pain, as well as for promoting recovery/withdrawal from opioid use. There is also evidence that Acupuncture and electroacupuncture release the body's own opioid

peptides, further supporting Acupuncture's role in pain management and opioid withdrawal/recovery (Han, J., 2004).

The evidence that Acupuncture is effective at lessening withdrawal symptoms from opioid use is increasing. A meta-analysis of Acupuncture's utility for treating opioid detoxification when combined with allopathic therapies found that withdrawal-symptoms were lower in combined treatment trials than in agonist-alone trials on specific withdrawal days. In addition, combined treatment also produced lower reported rates of side effects and appeared to lower the required dose of opioid agonist. This led the authors to conclude that "this meta-analysis suggests that Acupuncture combined with opioid agonists can effectively be used to manage the withdrawal symptoms" (Liu, T., et. al., 2008).

Cost Effectiveness

There is a growing body of evidence illustrating that Acupuncture is cost effective for treatment of a number of conditions. The Acupuncture Evidence Project (McDonald, J., & Janz, S., 2017, p. 52), for example, cites multiple studies, which indicate with evidence that treatment of low back pain with Acupuncture is cost-effective. Additional studies cited show that Acupuncture is cost-effective for neck pain and upper back pain (p. 52). Another study found Acupuncture to be at least as effective as conventional preventative medication for migraine and is safe, long lasting, and cost-effective (Silva, A. N., 2015).

In a meta-analysis assessing the use of Acupuncture for non-specific low back pain, it was found that Acupuncture met the world health organization's benchmark for a very highly cost-effective intervention. The WHO considers cost-effectiveness with reference to a 'disability-adjusted life-year' or 'DALY.' One DALY can be thought of as one lost year of "healthy" life. The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease

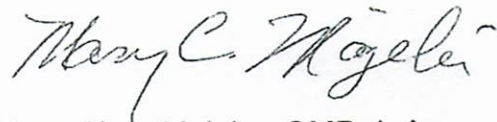
and disability. The WHO defines a highly cost-effective treatment as one in which the amount of money spent to prevent a disability-adjusted life-year (thus creating one year of 'healthy' life) is less than the GDP per capita. For the year of 2019, then, a medical intervention which prevented a DALY and cost less than \$52,000 would be considered highly cost-effective. Based on this criteria, Acupuncture as a complement to standard care for relief of chronic lower back pain is highly cost-effective. with a cost. When co-morbid depression is alleviated at the same rate as pain, the cost saved is around \$18,960 per DALY avoided, making it extremely cost-effective (Taylor, P., et. al., 2013).

An increasing number of hospitals, pain clinics and addiction centers are recognizing the important role Acupuncture has to play in the health-care system. Acupuncture is an effective, safe, and non-addictive pain intervention, in addition to being effective in the treatment of number of conditions. Considering the enormous economic burden brought by the opioid crisis, insurance plans and providers would be wise to include coverage of this cost-effective medical treatment. There is little to lose, and an enormous amount to be gained.

Sincerely,



Lissa Juedemann, L.Ac., Chair
NC Acupuncture Licensing Board
Lissa.acu@gmail.com



Mary Cissy Majebe, OMD, L.Ac
President, Daoist Traditions College
president@daoisttraditions.edu

ⁱ <https://governor.nc.gov/news/governor-cooper-announces-12-million-grant-fight-opioid-epidemic-nc>

ⁱⁱ <https://www.ncdoj.gov/opioidcrisis>

ⁱⁱⁱ <https://www.ncdhhs.gov/about/department-initiatives/opioid-epidemic>

^{iv} <https://www.shpnc.org/health-wellness/opioid-resource-center>

Works Cited

- Center for Behavioral Health Statistics and Quality (CBHSQ). 2017 National Survey on Drug Use and Health: Detailed Tables. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2018.
- CDC/NCHS, National Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2018. <https://wonder.cdc.gov>. Accessed on <https://www.drugabuse.gov/drugs-abuse/opioids/opioid-overdose-crisis#five>
- Fleckenstein, J., Harris, R., Zubieta, J., & Scott, D. (2009). Traditional Chinese acupuncture and placebo (sham) acupuncture are differentiated by their effects on μ -opioid receptors (MORs). *Deutsche Zeitschrift Für Akupunktur*, 52(4), 38-39. doi:10.1016/j.dza.2009.10.027
- Health Topics – Opioid Overdose, Policy, Performance, and Evaluation at Centers for Disease Control and Prevention, 8/17/2021. Accessed on <https://www.cdc.gov/policy/polaris/healthtopics/opioid/index.html>
- Han, J. (2004). Acupuncture and endorphins. *Neuroscience Letters*, 361(1-3), 258-261. doi:10.1016/j.neulet.2003.12.019
- Liu, T., Shi, J., Epstein, D. H., Bao, Y., & Lu, L. (2008). A Meta-Analysis of Acupuncture Combined with Opioid Receptor Agonists for Treatment of Opiate-Withdrawal Symptoms. *Cellular and Molecular Neurobiology*, 29(4), 449-454. doi:10.1007/s10571-008-9336-4
- McDonald, J., & Janz, S. (January 2017). The Acupuncture Evidence Project: A Comparative Literature Review (Revised Edition ed., pp. i-73, Rep. Australian Acupuncture and Chinese Medicine Association).
- Office of Research & Development. (n.d.). Retrieved from <https://www.research.va.gov/topics/pain.cfm>
- Salazar, T., Richardson, M., Beli, E., Ripsch, M., George, J., Kim, Y., . . . Yan, Y. (2017). Electroacupuncture Promotes Central Nervous System-Dependent Release of Mesenchymal Stem Cells. *Stem Cells*, 5(35), 1303-1315. doi:10.1002/stem.2613.
- Silva, A. N. (2015). Acupuncture for Migraine Prevention. *Headache: The Journal of Head and Face Pain*, 55(3), 470-473. doi:10.1111/head.12525
- Taylor, P., Pezzullo, L., Grant, S. J., & Bensoussan, A. (2013). Cost-effectiveness of Acupuncture for Chronic Nonspecific Low Back Pain. *Pain Practice*, 14(7), 599-606. doi:10.1111/papr.12116
- U.S. Department of Health and Human Services. (2019, April 24). HHS Fact Sheet: Combating the Opioid Crisis. Retrieved from <https://www.hhs.gov/about/news/2019/04/24/hhs-fact-sheet-combating-the-opioid-crisis.html>
- Vowles KE, McEntee ML, Julnes PS, Frohe T, Ney JP, van der Goes DN. Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis. *Pain*. 2015;156(4):569-576. doi:10.1097/01.j.pain.0000460357.01998.fl.
- World Health Organization. *Acupuncture: review and analysis of reports on controlled clinical trials*. Geneva: World Health Organization; 2002.
- 2019 Opioid Summit. (n.d.). Retrieved from <https://www.ncdhhs.gov/about/department-initiatives/opioid-epidemic>.
- North Carolina Reports 40% Increase in Overdose Deaths in 2020 Compared to 2019; NCDHHS Continues Fight Against Overdose Epidemic. North Carolina Department of Health and Human Services. 2022. Retrieved from: <https://www.ncdhhs.gov/news/press-releases/2022/03/21/north-carolina-reports-40-increase-overdose-deaths-2020compared-2019-ncdhhs-continues-fight-against>.