

COMMENTARY

# Addressing Chronic Pain in Mississippi: A Population Health Science Approach

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Over a decade ago, the National Institutes of Health and Institute of Medicine of Medicine recommended a population based strategy to address the national public health crisis of chronic pain.<sup>1</sup> In this strategy, the traditional definition of chronic pain, pain greater than 3-6 months, would be replaced with a more operationalizable definition to capture how chronic pain interferes with life. High impact chronic pain (HICP) defines chronic pain by whether or not it causes significant amounts of impairment, disability, and health care resource utilization.<sup>2</sup> Because HICP focuses on pain interference, the burden of chronic pain across different populations and its consequences are more easily measured.<sup>2</sup> National prevalence studies of HICP have shown the prevalence of high impact pain to be higher in those with lower socioeconomic status and those with public insurance in both non-cancer and cancer populations.<sup>1,3-5</sup> As it relates to the putting HICP pain to use on the national level, HICP, relative to non-HICP, has been shown to predict greater health care costs and utilization, greater opioid use in patients with chronic spinal pain, and to be able to predict outcomes after spine surgery.<sup>3,6-9</sup> In addition, roughly 85% of patients with HICP report the inability to work outside of the home due to pain.<sup>3</sup>

In 2014, the Mississippi State Department of Health burden of disease report showed that 22% of the population live below the federal poverty level and 20% have less than a high school education.<sup>10</sup> Moreover, it showed that the percentage of Mississippians reporting arthritis exceeded national estimates and activity limiting arthritis disproportionately burdening Mississippians of low socioeconomic status.<sup>10</sup> Consistent with these findings, 2017 state level data estimated the cost of opioid related hospitalizations increased by 17% from 2016 to reach 322 million dollars.<sup>11</sup> Moreover, 2017 data showed that Mississippi ranked 8<sup>th</sup> in per capita cost of opioid use disorder and opioid related overdose deaths in the United States.<sup>12</sup>

The term HICP was proposed as a tool for pain surveillance to improve population health.<sup>2</sup> Surveillance of HICP and its consequences can be measured at state and local levels using the brief surveys in appendix A and B, which have been shown to be valid, have a low refusal rate, predict long term pain related outcomes, and reveal health disparities.<sup>1,4-9,13-15</sup> Surveillance systems, a core function a public health, serve as a beacon for population

health.<sup>16</sup> There are opportunities to improve surveillance of chronic pain at state and local levels with the Mississippi State Department of Health and Office of Health Data and Research, which functions to build data capacity at the state and local levels by conducting population-based health surveys. In addition, it has been shown nationally that hospital systems can combine HICP surveys with data from electronic medical records to monitor pain therapies and outcomes.<sup>6</sup> With the facts in mind, the following approach should be considered in state and local context to address chronic pain and chronic pain surveillance in Mississippi:

1. Estimate the prevalence of both chronic pain and high impact chronic pain in the diverse healthcare settings in Mississippi at state and local levels (i.e. primary care, post-surgical, pediatric and cancer). Define the determinants of chronic pain and high impact pain across populations in Mississippi.
2. Track and measure how different populations with chronic pain and high impact chronic pain utilize pain treatment resources and other health care resources.
3. Gather insights on the quality of pain care received by populations with chronic pain and identify emerging needs.
4. Quantify the economic impact of healthcare utilization and disability in chronic pain populations.
5. Institute interventions and appropriately allocate resources. Appropriate interventions include changes in policies that target social determinants and health behaviors, improving access to evidenced based pain treatments, educating the health care workforce, and the implementing innovative informatics tools such as telehealth.
6. Evaluate the cost effectiveness of such interventions at the population level.

Prior reports suggest that HICP is associated with factors prevalent in Mississippi: poverty, low education, inadequate insurance, and African American race.<sup>1,4,5,8,10,14,15</sup> Considering both the economic implications of the disability, health care resource utilization and differential population burden of disabling pain in Mississippi, it is prudent for health care leaders, public health professionals, researchers, and policy makers in Mississippi to collaborate to develop improved pain surveillance and population-based pain research to enhance the care of Mississippians with chronic pain.

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## REFERENCES

1. Janevic MR, McLaughlin SJ, Heapy AA, Thacker C, Piette JD. Racial and Socioeconomic Disparities in Disabling Chronic Pain: Findings From the Health and Retirement Study. *J Pain*. 2017;18(12):1459-1467. doi:10.1016/j.jpain.2017.07.005
2. NationalPainStrategy\_508C.pdf. Accessed April 5, 2023. [https://www.iprcc.nih.gov/sites/default/files/documents/NationalPainStrategy\\_508C.pdf](https://www.iprcc.nih.gov/sites/default/files/documents/NationalPainStrategy_508C.pdf)
3. Pitcher MH, Von Korff M, Bushnell MC, Porter L. Prevalence and Profile of High-Impact Chronic Pain in the United States. *J Pain*. 2019;20(2):146-160. doi:10.1016/j.jpain.2018.07.006
4. Dahlhamer J, Lucas J, Zelaya, C, et al. Prevalence of Chronic Pain and High-Impact Chronic Pain Among Adults — United States, 2016. *MMWR Morb Mortal Wkly Rep*. 2018;67(36):1001-1006. doi:10.15585/mmwr.mm6736a2
5. Jiang C, Wang H, Wang Q, Luo Y, Sidlow R, Han X. Prevalence of Chronic Pain and High-Impact Chronic Pain in Cancer Survivors in the United States. *JAMA Oncol*. Published online June 20, 2019. doi:10.1001/jamaoncol.2019.1439
6. Von Korff M, Scher AI, Helmick C, et al. United States National Pain Strategy for Population Research: Concepts, Definitions, and Pilot Data. *J Pain*. 2016;17(10):1068-1080. doi:10.1016/j.jpain.2016.06.009
7. Herman PM, Broten N, Lavelle TA, Sorbero ME, Coulter ID. Health Care Costs and Opioid Use Associated With High-impact Chronic Spinal Pain in the United States. *Spine*. 2019;44(16):1154-1161. doi:10.1097/brs.0000000000003033
8. Cook CE, George SZ, Lentz T, et al. High-Impact Chronic Pain Transition in Lumbar Surgery Recipients. *Pain Med*. 2023;24(3):258-268. doi:10.1093/pm/pnac150
9. Cook CE, George SZ, Asher AL, et al. High-impact chronic pain transition in surgical recipients with cervical spondylotic myelopathy. *Journal of Neurosurgery: Spine*. 2022;37(1):31-40. doi:10.3171/2021.11.spine211260
10. Short V. *Report on the Burden of Chronic Disease in Mississippi, 2014*. Mississippi State Department of Health; 2014.
11. Staneva M. *Trends in Opioid-Associated Hospitalizations in Mississippi, 2016 and 2017*. Mississippi State Department of Health; 2018.
12. Luo F, Li M, Florence C. State-Level Economic Costs of Opioid Use Disorder and Fatal Opioid Overdose — United States, 2017. *MMWR Morb Mortal Wkly Rep*. 2021;70(15):541-546. doi:10.15585/mmwr.mm7015a1
13. Duca LM, Helmick CG, Barbour KE, et al. A Review of Potential National Chronic Pain Surveillance Systems in the United States. *J Pain*. 2022;23(9):1492-1509. doi:10.1016/j.jpain.2022.02.013
14. Von Korff M, DeBar LL, Krebs EE, Kerns RD, Deyo RA, Keefe FJ. Graded chronic pain scale revised: mild, bothersome, and high-impact chronic pain. *Pain*. 2020;161(3):651-661. doi:10.1097/j.pain.0000000000001758
15. George SZ, Bolognesi MP, Bhavsar NA, Penrose CT, Horn ME. Chronic Pain Prevalence and Factors Associated With High Impact Chronic Pain following Total Joint Arthroplasty: An Observational Study. *J Pain*. 2022;23(3):450-458. doi:10.1016/j.jpain.2021.09.007
16. Groseclose SL, Buckeridge DL. Public Health Surveillance Systems: Recent Advances in Their Use and Evaluation. *Annu Rev Public Health*. 2017;38:57-79. doi:10.1146/annurev-publhealth-031816-044348

## SUPPLEMENTARY MATERIALS

### **Appendix A & B**

Download: <https://jmsma.scholasticahq.com/article/84668-addressing-chronic-pain-in-mississippi-a-population-health-science-approach/attachment/173881.docx>

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