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Optimal Spatial Access Measurement for Opioid Use Disorder Treatment: Toward Medication Success and Social Justice

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The opioid epidemic has been significantly impacted in the United States. To mitigate the drug abuse, spatial access to authorized medications for opioid use disorder (MOUDs) plays a crucial role. Nevertheless, there remains a dearth of comprehensive methodologies for assessing such accessibility. Questions arise regarding the permissible extent of travel, with considerations encompassing specific medication types (including methadone, buprenorphine, or vivitrol) and their respective impacts on outcomes.

This paper juxtaposes various metrics for gauging accessibility to MOUDs—ranging from travel time to the nearest facility, total counts within designated thresholds, to gravity-based (supply-demand) models—and ascertain optimal criteria for efficacy. Taking advantage of a high-performance computing environment, we could cover the entire continental United States at the census tract level as the study area. The results revealed that the choice of metrics might impact the research findings, and the compatibility among models varies depending on rurality and resource scarcity. By adopting a multi-faceted accessibility examination, our study contributes to pinpointing regions necessitating targeted interventions and resource allocation.

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