# Rural-Urban Disparities in Healthcare Labor Markets: Evidence from Job Postings in California*

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**Abstract**

The COVID-19 pandemic disrupted healthcare labor markets unevenly across geography, yet most evidence on healthcare workforce shortages relies on employment or wage data that cannot distinguish labor demand from supply. We study the spatial distribution of healthcare job postings in California using WageScape data from 2017 to 2022. This paper examines how rural-urban disparities in healthcare labor demand evolved through the pandemic and investigates whether infrastructure access, specifically highway proximity and designation as a Medically Underserved Area (MUA), mediates these disparities.

We measure rurality using Rural-Urban Commuting Area (RUCA) codes at the ZIP-code level and construct a monthly panel of new and active healthcare job postings. Using the COVID-19 shock as an exogenous disruption to healthcare labor demand, we estimate a difference-in-differences model with Poisson pseudo-maximum likelihood (PPML) to accommodate the count nature of postings.

We have two main findings. First, we find that rural areas experienced a significant relative decline in healthcare job postings following COVID-19. New postings in

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rural ZIP codes fell by approximately 20 percent relative to urban areas, while active postings declined by 16 percent. Event study confirms a persistent post-pandemic divergence. Second, we examine heterogeneity within rural areas along two dimensions: highway accessibility and MUA designation. Neither highway access nor MUA status significantly differentiates post-COVID outcomes within rural areas. However, highway proximity is associated with a 35 percent increase in postings in urban areas, suggesting that infrastructure benefits are accrued disproportionately to already-advantaged locations.

In summary, these results demonstrate widening rural-urban disparities in healthcare labor markets that operate on the extensive margin. The pandemic did not simply reduce healthcare hiring uniformly. It disproportionately reduced demand-side activity in rural communities. These findings highlight persistent geographic frictions in healthcare hiring and point to the need for targeted workforce incentives and infrastructure investment in underserved rural communities.