

Mental Health Access Disparities Dashboard: Executive Summary

Overview:

This interactive dashboard, built in Tableau Public (version 2024.3), visualizes mental health provider shortages and preventable hospitalization rates across U.S. counties, highlighting rural-urban disparities. Designed for policymakers, it integrates a map and scatter plot to explore simulated shortage reductions, offering actionable insights.

Data and Methodology:

Data was sourced from USDA.gov (rural-urban codes), HRSA.gov (HPSA scores), and countyhealthrankings.org (hospitalization rates). Using BigQuery SQL, I cleaned and joined rucc, hpsa, and preventable_hosp tables on 5-digit FIPS codes, filtering non-continental territories. The dataset (fips, county, state, Rural_Urban, hpsa_score, hosp_rate) had ~20 counties with missing data, handled in visualizations. Excel pivot tables and graphs, plus R statistical analysis, confirmed correlations between hpsa_score and hosp_rate. An ArcGIS shapefile enabled mapping. The dashboard (1280 x 1024 pixels) includes:

- Map (650 x 600 pixels): Counties colored by Adjusted_HPSA ($[\text{hpsa_score}] * (1 - [\text{HPSA_Reduction}])$).
- Scatter Plot (530 x 600 pixels): Adjusted_HPSA vs. Adjusted_Hosp_Rate, colored by Rural_Urban, excluding hpsa_score = 0 counties.
- Interactivity: A HPSA_Reduction slider (0-50%), Rural_Urban filter, and dynamic title, "Mental Health Provider Shortage Area Scores—All Counties/Rural Counties/Urban Counties," and dynamic subtitle showing average HPSA score and hospitalization rate, updating based on the Rural_Urban filter to clarify the data's scope.
- Tooltips: Show various information about each county.

Key Insights:

- Rural counties show higher HPSA scores and hospitalization rates, while urban counties have lower values, highlighting disparities.
- A 20% HPSA_Reduction lowers Adjusted_HPSA and Adjusted_Hosp_Rate, with greater rural impact.
- ~20 counties lack data, likely rural, flagged in tooltips.

Challenges and Resolutions:

Tooltip errors were fixed by validating fields. Static hosp_rate was resolved with Adjusted_Hosp_Rate. A filter excluded hpsa_score = 0 counties. The layout was optimized for clarity.

Recommendations:

- Target rural counties with high HPSA scores for provider recruitment.
- Improve rural data reporting for ~20 missing counties.
- Analyze socioeconomic factors for deeper insights.

Conclusion:

The dashboard, on Tableau Public ([view the dashboard](#)) enables interactive exploration of disparities, informing healthcare policy.