

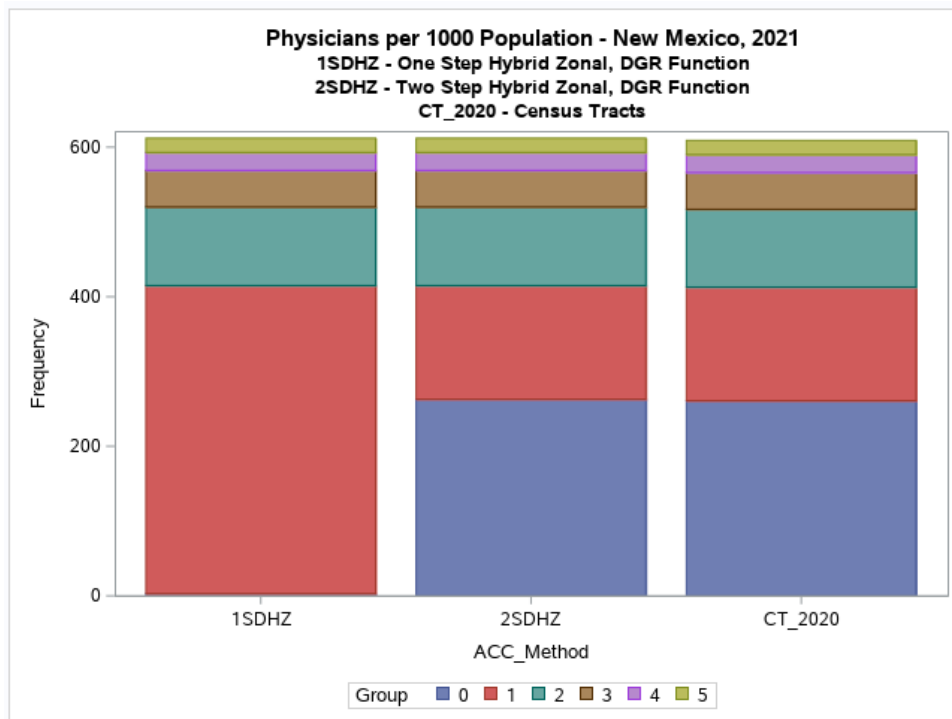
Comparison of One-Step and Two-Step Gravity Models Census Tracts with Generate Near Table Distances

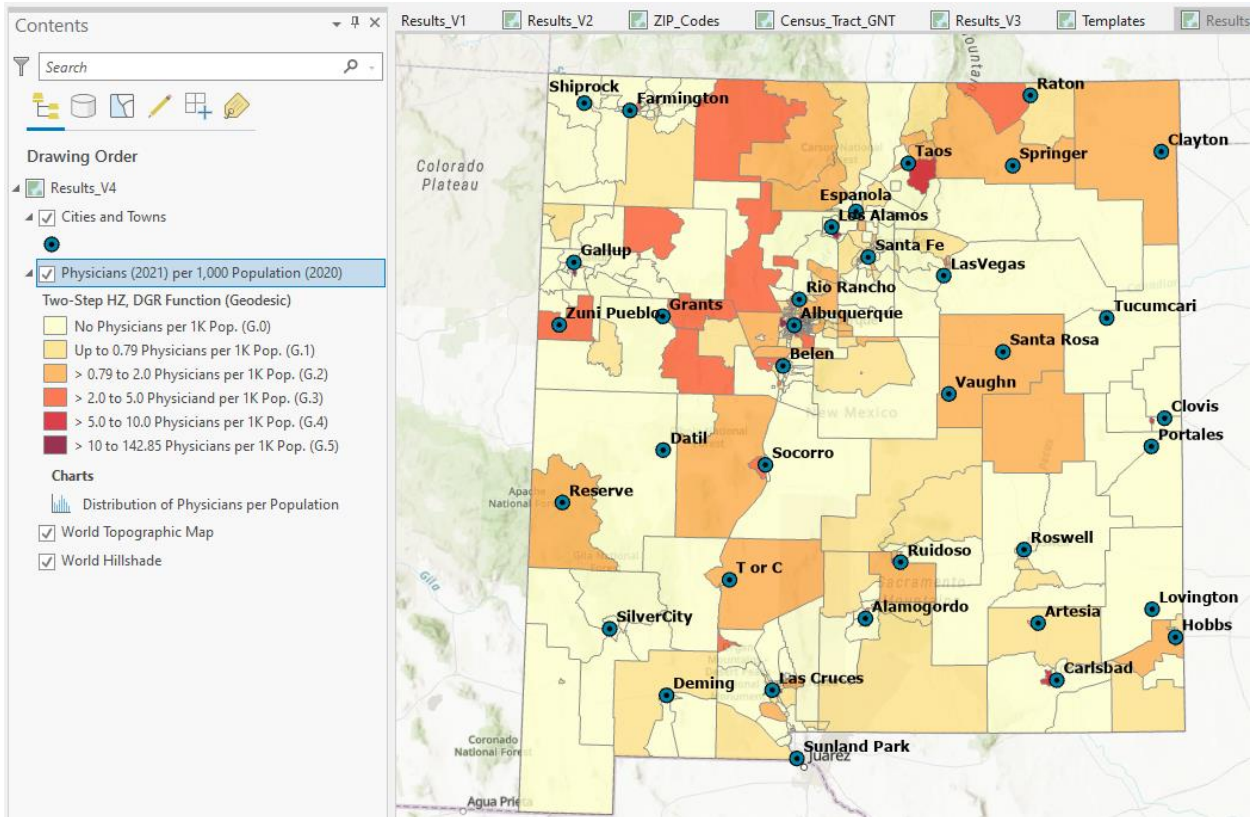
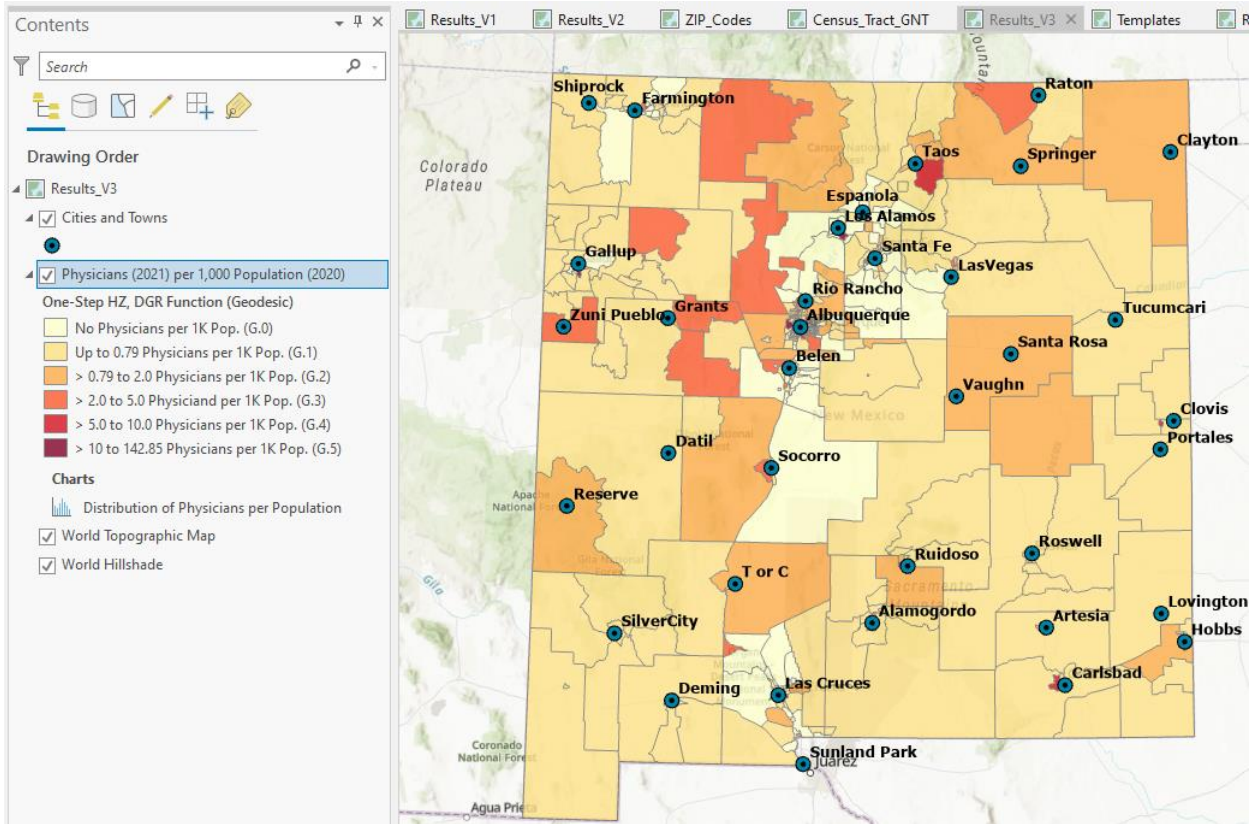
Preliminary Results (Version 1: 8/6/2022)

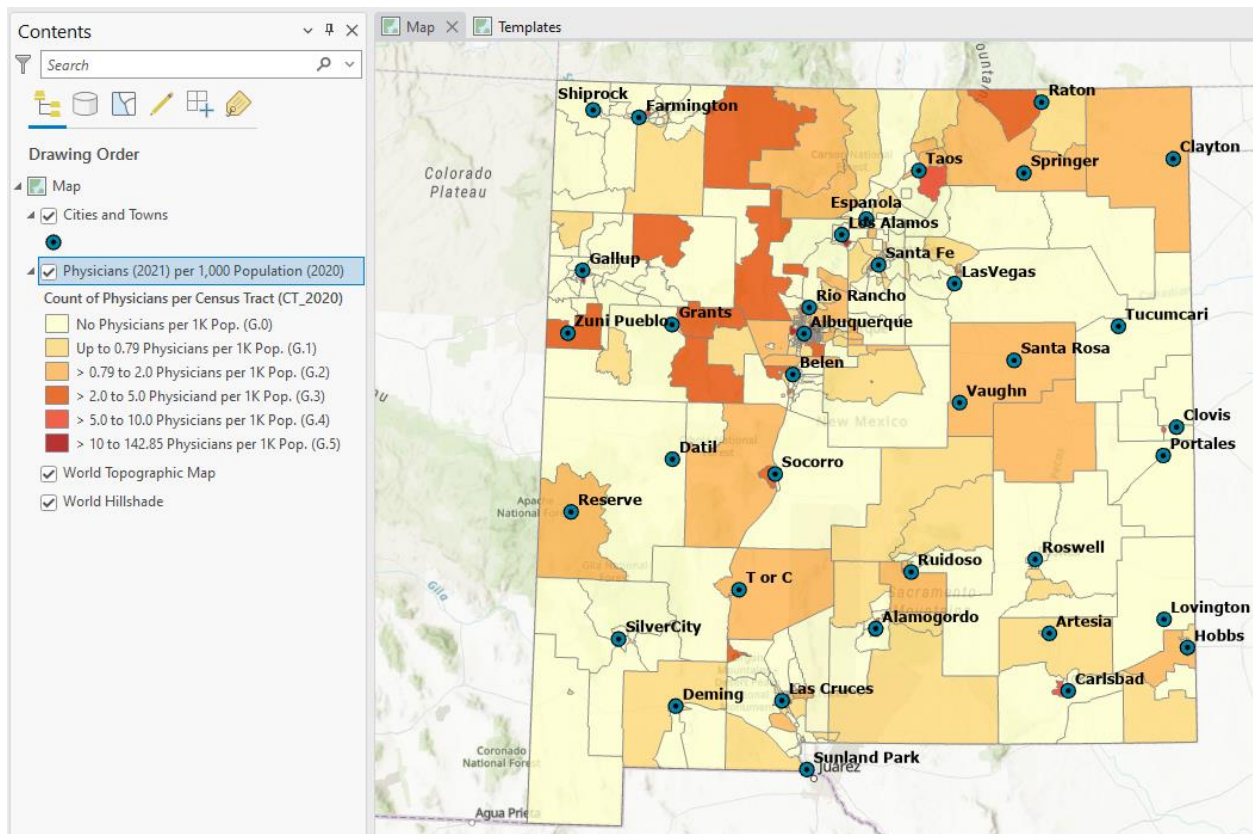
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HZ with DGR Rule-Based Distance Decay:

The following maps are example results of both the one-step (1SDHZ) and two-step methods (2SDHZ) using the hybrid-zonal rule-based (DGR-power) methods. **Note** that these maps are not exactly similar as some census tracts with different values were assigned to different map classes or categories. This is apparent for the second category or group (G.1) where the one-step method shows that there appears to be some accessibility, although relatively low. But the two-step method has many of the same census tracts in the first category (G.0) indicating no accessibility. The histogram (see below) clearly shows this discrepancy. It also shows that there is no apparent difference between the two-step method results and the original values for the census tracts (CT_2020). The additional map of original values (CT_2020, see below) when compared to the two-step model results (2SDHZ) shows that the two-step model was more restrained in measuring accessibility for this example application. This discrepancy, or the tendency of either method to over-estimate or under-estimate accessibility is essentially the main focus of this research project. However, the results based only on census tracts while informative, should be viewed with caution as the two-step method was not designed to be used this way. Hopefully the results from the follow-on analyses using ZIP Codes and individual locations will provide a better understanding of these discrepancies.







This discussion and maps are an extract from my NM Geographic Access to New Mexico Health Care Providers & Facilities web page (https://www.unm.edu/~lspear/health_stuff_update.html) that contains a more complete discussion of this research project.