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**Memorandum**

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To: Derek Wu, Neil Cholli

From: Dylan Craig

Date Created: 12/26/2024

Subject: Data Management Memo on VDSS Zip Treat Map

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**Purpose:** To demonstrate the data cleaning and management process visualizing the treatment status of each zip code with treatment being defined as zip codes with a greater-than-median haversine distance from their associated VDSS local office.

**\*\*Read READ\_ME as well as Script Directory for technical breakdown including file names**

**Step 1:** Upload the zip\_treat.dta file

Uploading the zip\_treat.dta file brings in every zip code, it’s assigned VDSS office FIPS code, and the distance between the two (see office distances folder). Several treatment variables exist including whether the zip code is in the top half or top 25% of distances relative to other zip codes served by the same VDSS office zip code or relative to all zip codes in the dataset. For the purposes of this research, we went with the haversine distance for a zip-LDSS pairing being greater than half of the distance values across the entire dataset.

**Step 2:** Aggregate zip codes to designate “partially treated” zip codes

Because some zip codes overlap several counties, and thus may be served by several VDSS local offices, there are some zip codes that are both treated and untreated in the dataset. The R Script categories these as “partially treated”. Other zip codes are either “Treated” or “Non-Treated”

**Step 3:** Create a map of Treated zip codes

Using TIGER shapefiles of ZCTAs, which correspond approximately to zip codes, a map is generated designating zip codes by “Treated”, “Non-Treated”, or “Partially-Treated” and then saved to the Plots folder. See the data analysis memo for further breakdown.